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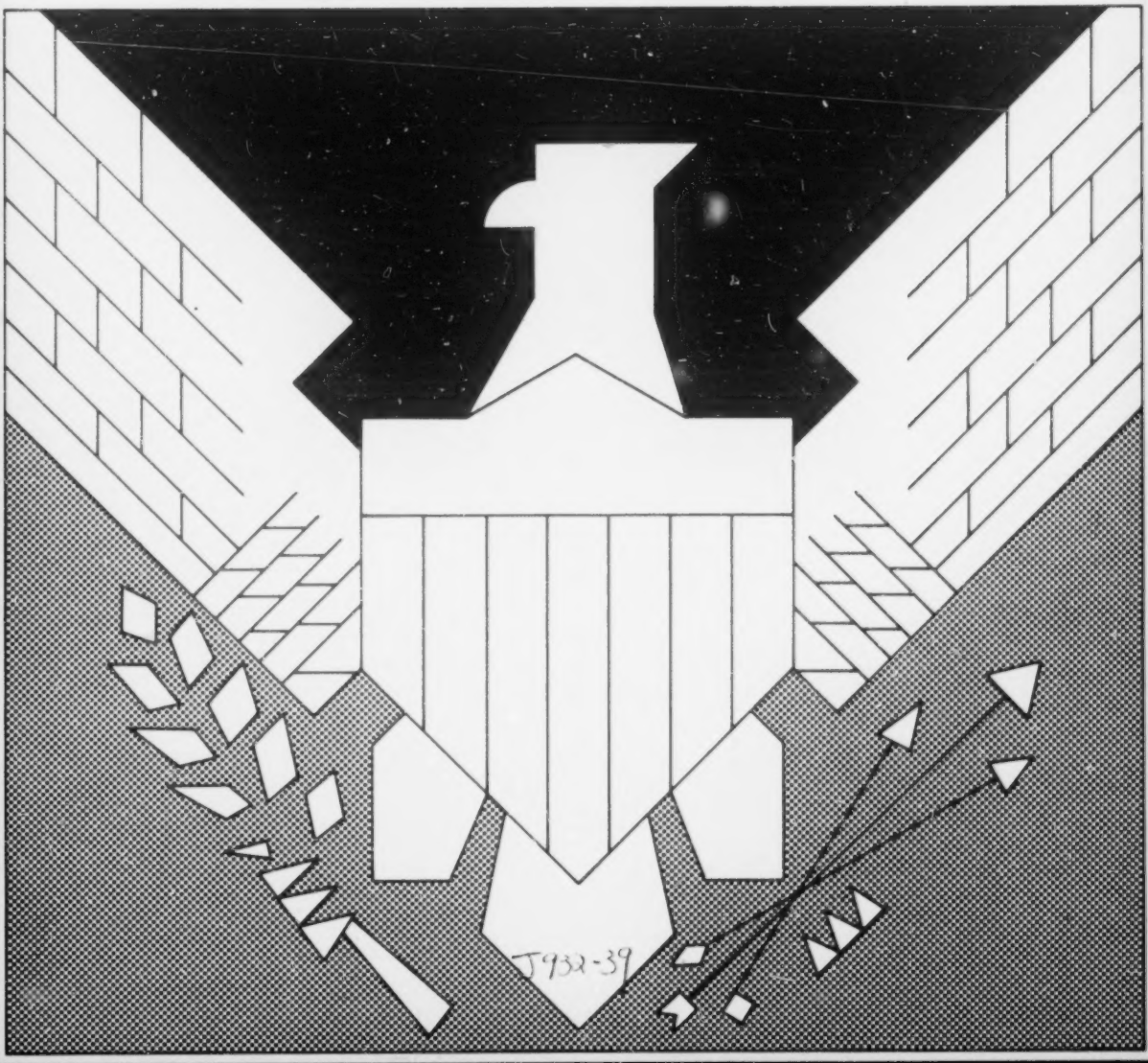
Improving the Army Reserves



CBO STUDY

IMPROVING THE ARMY RESERVES

The Congress of the United States
Congressional Budget Office

NOTES

Unless otherwise specified, all costs are expressed in constant fiscal year 1986 budget authority dollars. All dates, except those used in a historical context, refer to fiscal years.

Numbers in tables may not add to totals because of rounding.

PREFACE

The Administration is continuing to modernize the U.S. Army's forces, and plans to add two active-duty divisions by the end of this decade. It seeks to hold down costs through increased reliance on part-time personnel in the selected reserve. In the event of a major war, these personnel would be used primarily for support missions. This approach would allow the Army to expand its active combat forces during peacetime without a corresponding increase in full-time active-duty personnel.

This report, prepared at the request of the Subcommittee on Military Personnel and Compensation of the House Committee on Armed Services, examines the peacetime readiness of current Army reserves. It considers the effects of the Administration's plan on deployability, and estimates the increases in reserve manpower and equipment that would be required. The report also presents alternatives to the plan. The options considered would increase readiness in those reserve units scheduled to be deployed early in a war, paying for the improvements by minimizing enhancements in personnel and equipment in later-deploying units. In accordance with the mandate of the Congressional Budget Office to provide objective and nonpartisan analysis, the report offers no recommendations.

The report was prepared by John H. Enns of the National Security Division of the Congressional Budget Office, under the general supervision of Robert F. Hale and Neil Singer. Michael J. McCord of CBO's Budget Analysis Division contributed to the estimates of costs. The author is grateful for helpful reviews of earlier drafts by Lee Austin (Lieutentant Colonel, United States Army), David Grissmer of the Rand Corporation, and John D. Mayer, Jr., Frances Lussier, Neil Fischer, and Michael A. Miller of CBO. The manuscript was edited by Francis S. Pierce.

Rudolph G. Penner
Director

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SUMMARY

The Administration is currently pursuing an extensive modernization and expansion of U.S. Army forces. To hold down personnel costs, the Army plans large increases in its selected reserve components--the Army Reserve (USAR) and the Army National Guard (ARNG). At the same time, it is holding active strength at 781,000. Substituting reserve for active personnel is less costly than building additional active forces because reservists are paid only for limited periods of drill time--generally one weekend each month and two weeks at summer training camp. Operating costs are also usually lower.

To allow the number of active combat forces to increase without adding personnel, the Army plans to transfer support missions--such as transportation and maintenance--from the active force to the reserves. Continued substitution of reserve for active personnel means that, if a major war should break out, the reserves would be required to play a much greater role earlier in the conflict than they have played in past wars. Various concerns have been voiced regarding the reserves' ability to meet those more demanding requirements. This report addresses those concerns and suggests approaches to help the reserves meet their mission requirements while also holding down costs.

THE RESERVES TODAY

In recent years, the Army has increased its reliance on reserves for combat support (artillery, engineering, and armored cavalry) and combat service support (transportation, medical, and maintenance). CBO currently estimates that 42 percent of all Army forces required in the first 30 days of a major war in Europe would be reserves.

Reserve readiness has also improved, particularly personnel readiness. Between 1981 and 1985, the selected reserves added over 130,000 personnel to their ranks, reversing a downward trend that resulted from the ending of the draft. Some 25,000 of those additions were full-time military personnel to assist in training and administering part-time personnel.

As personnel numbers have grown, so too have the experience of career personnel and the quality of new recruits. Those reserves with over

10 years of service increased from 21 percent of the total enlisted force to 26 percent between 1979 and 1984. The percentage of male recruits without prior military service who hold high school diplomas increased from 55 percent to 77 percent in the USAR and from 60 percent to 67 percent in the ARNG between 1981 and 1984.

Trends in Condition Ratings

Have improvements in personnel, as well as other factors, made today's reserves ready for their demanding missions? To help answer that question, this study examines the Army's principal measures of reserve unit readiness: the data collected twice each year and reported in the Unit Status and Identification Report (UNITREP). Overall, most reserve units are rated "marginally ready" or "not ready" for combat. While there have been improvements over the past three years, particularly in personnel readiness, as the reserves expand there remains considerable cause for concern, especially in the equipment area.

Ability to Meet Deployment Requirements

As another indicator of the reserves' ability to meet U.S. commitments to NATO during a major conflict, CBO compared estimates of the Army's deployment requirements with its capabilities. Requirements are based on this Administration's publicly stated goal of getting 10 divisions to Europe in the first 10 days of a war, and on the assumption that 15 active divisions plus three reserve divisions would eventually be deployed.

Based on these assumptions, CBO estimates that the Army could meet its requirements for deploying reserve combat units (infantry, armor, and other front-line units). But shortfalls of 30 percent or more in reserve combat support and combat service support could occur during the first 30 days of a conflict. This possibility emphasizes the importance of making improvements in the early-deploying support units. Reserves are more able to meet requirements later in a war.

These results do not necessarily show that the Army could not meet its own deployment plans, which are not publicly available. But the results do suggest that, under reasonable assumptions consistent with unclassified information, the Army would have difficulty in meeting requirements, especially for early-deploying support units. This possibility and the readiness ratings are a source of concern, particularly since many of the missions planned for transfer to the reserves during the next five years will be in support roles.

THE ARMY'S PLAN: FISCAL YEARS 1986 TO 1990

The Army is planning further improvements in the reserves in the areas of manpower and equipment. The plans described below are based on the Army's proposals for fiscal years 1986-1990 that were submitted with the February 1985 budget. Though there will be changes based on Congressional action, these budget proposals are the only detailed five-year plans currently available.

Manpower and Equipment Increases

The manpower plan submitted with the February 1985 budget would freeze active manpower at 781,000 through 1990 and increase the selected reserve components by 116,000, or 16 percent, over the next five years. Included in this increase are 49,000 Active Guard and Reserve (or AGR) personnel who are full-time military personnel as well as being reservists. The balance are part-time, selected reserve personnel. AGR personnel are assigned to key positions in reserve units where they perform administrative tasks and coordinate training programs for part-time reservists. Today, the Army already has full-time personnel assigned to all of the units scheduled for early deployment during the first 30 days of a war. The additional increase included in the five-year plan would allow virtually all reserve units to be staffed with full-time personnel and would permit the Army to come very close to its goal of 15 percent full-time support manpower in the reserves (see Summary Table 1).

In addition to increasing reserve manpower, the Administration plans to introduce some new equipment and redistribute older equipment from the active force to reserve units. Equipment shortages have been widespread in the reserves, and the Army's plans should alleviate some of these shortages.

Cost Increases Under the Administration's Plan

The planned expansion will, of course, increase costs. For new equipment, the Administration's plan submitted in February 1985 includes annual costs of $2.5 and $2.7 billion (in 1986 dollars) for 1986 and 1987, respectively. Beyond 1987, CBO estimates that reserve equipment costs would grow from $3.1 billion in 1988 to $3.7 billion in 1990 (see Summary Table 2).

Reserve military manpower costs would also increase significantly under the Administration's plan. CBO estimates that over the five-year period from 1986 through 1990, annual reserve personnel costs would rise by $2.0 billion, an increase of 36 percent over today's level in constant dollars.

Eighty percent of this increase would fund the planned increase of 49,000 full-time (or AGR) personnel and the remainder would pay for increasing the number of part-time reservists (see Summary Table 2).

Remaining Problems and Potential Costs

While equipment shortages should be partially alleviated by the Administration plans, some significant shortages are likely to remain. Reports by

SUMMARY TABLE 1. PROJECTED ARMY STRENGTH FOR SELECTED RESERVE PERSONNEL INCLUDED IN THE 1986 BUDGET, FISCAL YEARS 1986-1990
(End-of-year strength in thousands)

Reserve Component/ Type of Personnel	Budget 1985	1986	1987	1988	1989	1990	Change 1986-1990
USAR							
Part-time	259.3	270.4	281.1	291.5	297.2	297.9	38.6
Full-time	26.7	29.6	32.9	36.5	39.8	43.1	16.4
Total	286.0	300.0	314.0	328.0	327.0	341.0	55.0
ARNG							
Part-time	392.2	395.3	396.9	404.1	414.0	421.0	55.0
Full-time	45.8	54.7	65.1	72.9	78.0	78.0	32.2
Total	438.0	450.0	462.0	477.0	492.0	499.0	61.0
All Army Selected Reserve							
Part-time	651.5	665.7	678.0	695.6	711.1	718.9	67.4
Full-time	72.5	84.3	98.0	109.4	117.9	121.1	48.6
Total	724.0	750.0	776.0	805.0	829.0	840.0	116.0
Full-Time as Percent of Total Strength	10	11	12.6	13.6	14.2	14.4	4.4

SOURCE: Department of Defense, *Manpower Requirements Report for Fiscal Year 1986*, vol. III: Force Readiness Report, February 1985; U.S. Army data.

the reserves suggest, for example, that by 1988 they will still be short as much as 25 percent of the dollar value of their needs for critical equipment items. Shortages may also exist for spare parts, ammunition, and other support equipment. More important, with the exception of tanks, many of the Army's new weapons will not be available to reserve units in large numbers until well into the next decade. This is a cause for concern since many of the missions being transferred from active to reserve status will require that reserves operate and maintain the same equipment used by active units during a war.

SUMMARY TABLE 2. ESTIMATED COSTS OF NEW EQUIPMENT AND MANPOWER UNDER THE ADMINISTRATION'S PLAN FOR EXPANDING THE ARMY SELECTED RESERVE: FISCAL YEARS 1986-1990
(In millions of 1986 dollars)

Cost Category	1986	1987	1988	1989	1990
Equipment					
Aircraft/missiles	672	844	909	996	1,084
Weapons/tracked vehicles	715	434	689	748	814
Trucks and other support vehicles	279	451	437	479	521
Other	786	988	1,065	1,177	1,281
Total Equipment	2,452	2,717	3,100	3,400	3,700
Manpower					
Part-time	4,215	4,310	4,400	4,505	4,585
Full-time	1,380	1,765	2,265	2,660	2,935
Total Manpower	5,630	6,075	6,665	7,165	7,520
Total Equipment and Manpower	8,080	8,795	9,765	10,565	11,220

SOURCE: Department of Defense, Procurement Programs Annex (P-1R) Department of Defense, Fiscal Year 1986; Congressional Budget Office.

The reserves estimate that the cost of meeting all current needs for equipment amount to $12 billion. A significant part of that shortfall could still remain despite planned increases in spending on reserve equipment.

Equipment shortfalls are not the only reason that costs may increase beyond those projected under the Administration plan. The proportion of enlisted personnel with over 10 years of military service has grown steadily over the last five years as more experienced reserves have chosen to remain on duty. The Army may find it necessary to limit future increases in this group to ensure a balance of junior and senior personnel. CBO estimates that if the Army limits the proportion of reserve enlisted personnel with over 10 years of service to 26 percent (today's percentage), shortages of recruits without prior military service would range between 15,000 and 21,000 in the USAR and between 9,000 and 16,000 in the ARNG over the next five years. If the reserves want both to slow the growth in their career force and avoid recruiting shortfalls, they may need added recruiting resources. They could, for example, need as much as $80 million annually for more full-time recruiters.

The reserves could offset most of these potential recruiting shortages by accepting an increasingly senior force (those with over 10 years of service). But that policy poses problems. Senior personnel are expensive and are more likely to have suffered attrition in their job skills because of being away from active duty (and its accompanying intensive training) for longer periods.

Nor are recruiting problems the only potential personnel problems. The reserves--especially the USAR--are short of members with aviation, medical, and transportation skills. Peoples with these skills are not always available in the areas where reserve units are located. Added bonuses, or new types of personnel policies, may be needed.

Thus, despite improvements in the numbers and quality of reserve personnel during the past three years, important concerns remain regarding the ability of the Army reserves to meet their commitments during a major war--especially during the first 30 days.

ALTERNATIVE OPTIONS

Although additional resources would solve some of the reserves' problems, the Congress is currently seeking to hold down defense spending rather than increase it. Hence, the Congress may need to examine strategies that limit

the growth in reserve equipment and manpower costs, but at the same time maintain or improve the readiness of existing reserve units--particularly those scheduled to be deployed early in a war.

Option I: Improving Readiness in the 30-Day Forces

To improve equipment readiness in the early-deploying reserve units, the Army could be directed to equip all 30-day deploying units at 90 percent of wartime requirements rather than the 70 percent or 80 percent levels common today. New procurement would fill the equipment stocks of those units.

To improve personnel readiness in units short of their required skills--especially in the USAR--the Army could recruit and maintain a pool of personnel trained in the needed skills. These personnel would be required to have recent active-duty experience to ensure proficiency, but they would drill (and hence be paid) only 12 days a year, probably during the summer. Because they would drill infrequently, they would not have to live in areas where shortages exist, thus making recruiting easier.

Making these improvements would add about $2.7 billion to costs over the next five years. To pay for them, the Army could limit the planned growth in full-time (AGR) personnel. Since early-deploying units already are fully staffed with AGR personnel, this would not harm the early-deploying units but would prevent further improvements in the readiness of late-deploying reserve units.

Several approaches could be used to limit full-time support. For example, the reserves could substitute trained reserve personnel for full-time personnel in "overhead" jobs--those jobs in headquarters and not directly part of a reserve unit. Since these personnel would be available during limited periods for only 12 days each year, administrative workloads could increase at the headquarters level, but unit training should not be impaired. This approach would reduce the 1990 requirement for full-time personnel in the Army's plan by 5,200 and 1,300 for the ARNG and USAR, respectively.

To achieve greater reductions, a cap of 10 percent on full-time support (as a percent of selected reserve strength) could be imposed on both the ARNG and USAR. The substitution approach discussed above would help meet this limit. It would keep the reserves at today's level of full-time support, but would allow proportionate increases for future increases in end strength. It would also reduce the numbers of full-time support personnel in

SUMMARY TABLE 3. ESTIMATED COSTS (SAVINGS) OF ALTERNATIVE STRATEGIES RELATIVE TO THE ADMINISTRATION'S FEBRUARY 1985 PLAN, FISCAL YEARS 1986-1990
(In millions of fiscal year 1986 dollars)

Strategies	1986	1987	1988	1989	1990	Total Five-Year Costs/ (Savings)
Administration Plan						
Cost of increasing selected reserve manpower a/	135	585	1,165	1,665	2,120	5,670
Alternative Strategies						
Option I						
Costs of improving 30-day forces b/	535	540	550	560	570	2,755
Savings from limiting full-time support to 10 percent of reserve strength	(70)	(290)	(630)	(890)	(1,090)	(2,970)
Net costs (savings) relative to Administration plan	465	250	(80)	(330)	(520)	(215)
Option II						
Costs of improving 30-day forces b/	535	540	550	560	570	2,755
Savings from slowing reserve growth and limiting full-time support to 10 percent of reserve strength	(90)	(410)	(940)	(1,350)	(1,720)	(4,550)
Net costs (savings) relative to Administration plan	445	130	(390)	(790)	(1,150)	(1,795)

SOURCE: Congressional Budget Office.

a. Cost increases reflect the five-year manpower plans submitted in January 1985 adjusted for Congressional changes proposed for fiscal year 1986.

b. Costs include improvements in equipment and personnel for 980 USAR and ARNG units scheduled to deploy within 30 days after mobilization. A five-year phase-in period is assumed.

the Army's plan by 28,000 and 9,000 for the ARNG and USAR respectively. Early-deploying units, already fully staffed, would not be hurt. On the other hand, late-deploying units would not be able to improve their readiness. To provide additional full-time support, however, these late-deploying units might be able to rely on active units through the affiliation programs established in recent years.

Viewed broadly, this option would improve the overall readiness of reserve forces less than under the Administration's plan. But the Army's ability to fight during the critical first 30 days would be enhanced. The effect on costs, relative to the Administration plan, would range from an increase of $465 million in 1986 to savings of $520 million in 1990. Savings would total $215 million over the five-year period (see Summary Table 3).

Option II: Slow the Overall Growth in Reserve Forces

If the Congress chooses to hold down overall military manpower costs, then slowing the growth of Army reserve personnel would help reach this objective. As in Option I, this option would still improve the readiness of early-deploying units by giving them priority for new equipment and access to people with special skills that are now in short supply. To further reduce costs, this option would also stretch out the Administration's plan for reserve expansion from five to ten years and limit full-time support personnel to 10 percent of selected reserve strength.

By using this approach, the Army would probably not be able to add three divisions (two active and one reserve) by 1990 since fewer support missions could be transferred from active to reserve status. Thus, the capability of overall ground forces would be reduced compared with the Administration's plan, and the late-deploying units would not be able to increase their readiness appreciably above today's level. But the improvements in the 30-day reserve forces outlined above might offset this loss in capability in the key early days of a war. Moreover, relative to the Administration plan, savings would total $1.8 billion over the five-year period (see Summary Table 3).

CHAPTER I

INTRODUCTION

To improve the U.S. Army's capability, the Administration is modernizing existing forces and intends to expand the Army from its current 25 divisions to 28 divisions by 1990. The Administration's plan calls for increased reliance on reserve personnel to accomplish many of the support missions--such as maintenance and transportation--that would be required during the early stages of a conflict.

Reliance would be placed primarily on Selected Reserve units, whose personnel drill one weekend each month and during a two-week summer training period. 1/ The Selected Reserve is divided into two components--the Army Reserve (USAR) and the Army Reserve National Guard (ARNG). (This report uses the term "reserves" to refer to both components.) The USAR (about 275,000 personnel) is smaller and includes many of the combat support and combat service support missions that would be required to sustain the active forces during a major conflict. The ARNG (about 435,000 personnel) is organized by state, and during peacetime is under direct control of the state governors. During a national emergency, control of the ARNG would transfer to the Army; the ARNG would provide the majority of direct combat units in support of active forces. According to plans for fiscal years 1986 through 1990 (submitted with the February 1985 budget), the Army intends to hold the number of active-duty personnel constant at 781,000 through the end of this decade. Reserves, however, would increase to 840,000--an increase of 116,000, or 16 percent, over the level projected at the end of fiscal year 1985.

To build two new infantry divisions in the active force, as well as to provide personnel for new weapons now being fielded (such as the PATRIOT air defense system), the Army plans to transfer existing support missions

1. The Army reserve forces include nondrilling as well as drilling members. The largest nondrilling group is the Individual Ready Reserve (about 290,000 personnel) whose members do not train regularly and would be used to augment or replace personnel in active units during a national emergency.

from the active to the reserve components. 2/ This transfer would permit the active forces to include new units without adding personnel. Historically, substituting reserve for active units has been less costly than building additional active forces, and the Congress has supported this policy in the past.

Continued substitution of reserve for active personnel means that, should a major war erupt, the reserves would be called on to play a far wider role than they have in past wars. Reserve units would be deployed much earlier than usual following a decision to mobilize, and they would be used more often to support front-line, active-duty divisions. Concerns have been expressed, however, over the reserves' ability to meet these more demanding requirements.

THE ROLE OF RESERVE FORCES: PAST AND PRESENT

Before 1970, the reserve forces were viewed as reinforcements to the active Army. They were to be used relatively late in a war in situations where the active forces were inadequate in strength to be successful. Between 1950 and 1970 there were three reserve call-ups: Korea in 1950; the Berlin crisis in 1961; and Vietnam in 1968. In each case, a division (16,000 to 18,000 personnel) or a brigade (4,000 to 5,000 personnel) required a minimum of seven months to assemble, receive equipment, and train before being deployed. 3/ (In Vietnam, only a few units were actually deployed.)

Since 1971, however, the role of the reserves has changed significantly. In designing its current force structure, the Army has expanded the role of reservists as reinforcements for active units. Following a trend that began when the draft ended, support missions (such as engineering and maintenance) have increasingly been relegated to reserve units, though

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2. The two active divisions would include reserve roundout brigades while a third new division is planned to be manned entirely by reserves. The new divisions would be smaller than in the past; they would be light infantry divisions numbering 10,000 personnel rather than the 16,000 to 18,000 personnel found in traditional infantry and armor divisions. The Army believes that these new forces are needed to meet contingencies outside of Europe--in areas where rapid deployment forces would be required to meet threats less demanding than the massive ground invasion anticipated in a European war.

3. Martin Binkin, *U.S. Reserve Forces: The Problem of the Weekend Warrior* (Washington, D.C.: The Brookings Institution, 1977), p. 40.

many of these units would be available for deployment only after a long training period. Moreover, between 1981 and 1985, selected reserve manpower increased by 131,000 (or 20 percent) to a total of 740,000, while active Army manpower remained constant at around 781,000. During this period, the Army added one active division while expanding the use of reserves in support roles. In one particularly important change, 10 active combat divisions were reduced in personnel and assigned reserve brigades and battalions as part of their force structure. This latter approach--the "roundout" program--is especially significant. For the first time, active combat divisions are incomplete without concurrent mobilization of their associated reserve units. 4/

One consequence of this increasing reliance by the Army on the reserves is that over 40 percent of all forces required during the first 30 days of a European conflict would now consist of reservists. Although the details of future deployment plans are not available, this percentage may rise even higher as the Army expands toward meeting its goal of 28 divisions.

THE ARMY'S PLAN: FISCAL YEARS 1986-1990

This Administration originally proposed expanding both the active and reserve components of the Army. As recently as January 1983, the Army's five-year personnel plan (fiscal years 1984-1988) called for adding 35,000 active-duty personnel and 78,000 reserve personnel by the end of fiscal year 1988. Beginning with the January 1984 budget submission, however, renewed emphasis was placed on the reserves. Active strength was frozen at 781,000 and all additional manpower growth was directed to the reserve components (see Table 1).

Several reasons were presented for the change. First, the Army and others believed that recruiting for the active forces during the remainder of this decade would become increasingly difficult because of projected declines in the pool of qualified young males and increasing competition from colleges and employers for high-quality youth. Rather than risk a return to the recruiting difficulties of the late 1970s, the Army's revised

4. This program, begun in 1975, is termed "roundout" since reserve units fill the shortfalls in active divisions. Of the 18 active divisions planned, five will be "rounded out" with at least one combat brigade (about one-third of the division's strength), while six others (including the two light infantry divisions) will include one or more reserve battalions. Altogether the Army plans to use 29 reserve battalions, or 23,300 personnel, to round out the active divisions.

TABLE 1. PROJECTED ARMY REQUIREMENTS FOR SELECTED RESERVE PERSONNEL INCLUDED IN THE FISCAL YEAR 1986 BUDGET, FISCAL YEARS 1986-1990
(End strength in thousands)

Component/ Type of Personnel	Budget 1985	1986	1987	1988	1989	1990	Increase 1985-1990
USAR							
Officer	54	56	59	62	64	65	11
Enlisted	232	244	255	266	273	276	44
Total	286	300	314	328	337	341	55
ARNG							
Officer	44	45	44	46	48	50	6
Enlisted	394	405	418	431	444	449	55
Total	438	450	462	477	492	499	61
Total Selected Reserve							
Officer	98	101	103	108	112	115	17
Enlisted	626	649	673	697	717	725	99
Total	724	750	776	805	829	840	116

SOURCE: Department of Defense, *Manpower Requirements Report for Fiscal Year 1986*, vol. III, p. III-3.

plan reduced the demand for the number of active recruits, thus allowing for a higher quality of average recruits. Partly because of this shift, during the past two years, active Army recruiting success has been the highest in the history of the All Volunteer Force. 5/ This success is measured by the percentage of male recruits without previous military service who score in the top three mental categories on the entrance exam.

5. Some of this success may be the result of holding down the size of the active Army, but other factors have also contributed. For example, the recent high percentage of career personnel remaining on active duty has reduced the demand for recruits, while restructuring the Army's recruiter incentive program has led to a more productive use of recruiting resources. Pay was also increased during this period.

At the same time, reserve recruiting has become more difficult, especially the recruitment of personnel without prior military service. Nonetheless, overall reserve strength targets have generally been met, in large part because an increasing proportion of career personnel have chosen to remain in the reserves.

Another reason for the Army's recent shift toward the reserve forces has been budgetary pressures. This Administration, like its predecessor, is pursuing an expensive modernization program for Army equipment. 6/ Historically, reserve units have cost between 30 percent and 50 percent less than active units to maintain during peacetime. Consequently, the Army's revised plan seemed to offer a way to make the modernization program more affordable. Because the Army plans to spend much more to keep reserve units at higher levels of readiness, however, the actual savings may be more modest than in the past.

Key Issues

Some critics of the Army's plan have suggested that placing such a high degree of reliance on reserve units may be an unacceptable risk. 7/ The scenario for fighting a European war (the contingency most likely to necessitate the use of reserves) requires that some reserve units be available for deployment within 10 days, about 40 percent within 30 days, and the rest within 90 days following a decision to mobilize. Although the Army has increased reserve manpower levels significantly (by 15 percent) over the past five years, in the USAR personnel readiness is still far below active levels. Moreover, training time will always be limited (reserves are able to train only one-seventh as often as actives), and reserve equipment shortages are widespread. Thus, considerable uncertainty remains regarding the Army's ability to deploy the reserve forces necessary to be successful in the early stages of a European conflict.

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6. The Army's equipment modernization program focuses on improving the capabilities of the ground forces designed for a major conflict with the Soviet Union in Europe. Funding for this program has been high for several years, and the Army has bought over 10,000 tanks and other combat vehicles. Despite this increase, the total inventories of modern equipment remain well below the acquisition targets, particularly for the reserves. See Congressional Budget Office, "Defense Spending: What Has Been Accomplished," Staff Working Paper (April 1985).

7. See, for example, Philip Gold, "What the Reserves Can--and Can't--Do;" *The Public Interest* (Spring 1984), p. 56.

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The Army's solution to one of these problems--limited training time--has been to increase the level of full-time support manpower in the reserves. Full-time support personnel include: civilian military technicians, who are employed fulltime in a reserve unit and are often members of the weekend training unit as well; full-time military reservists, called Active Guard and Reserve (or AGR) personnel; and a small number of active-duty personnel assigned to the reserves. These personnel perform technical and administrative jobs and plan training programs to increase the effectiveness of weekend drill periods for the part-time reservists. Today, many of the units scheduled to be deployed early in the event of a major conflict already have full-time personnel assigned. According to its February 1985 plan, the Army plans further increases in full-time support from 72,500 in fiscal year 1985, or 10 percent of total reserve strength, to 121,000 or 12.6 percent of total strength in the USAR and 15.6 percent in the ARNG by fiscal year 1990 (see Table 2). Thus, the Army's total manpower plan--although holding active strength constant--includes almost 50,000 additional full-time military personnel.

There is no way of measuring the relationship between numbers of full-time personnel in a reserve unit and the timeliness with which it can respond in a crisis. The Army believes that further increases in full-time personnel--directed toward the late-deploying units--are necessary. Nevertheless, given the lack of measures and the high cost of this approach to improving reserve readiness, the Congress may wish to consider other alternatives.

Providing adequate equipment for the growing reserve forces will be a another challenging problem in the coming years. 8/ In keeping with a general policy of "first-to-fight, first-to-equip," the Army is providing modern equipment to some reserve units scheduled for early deployment. In some cases, reserve units will receive new equipment before active-duty units, but usually reserves get older equipment from active units as they receive new equipment. Thus, if the planned Army procurement budgets are cut, the process of modernization in the reserves could be relatively slow.

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8. The costs of eliminating today's reserve equipment shortfalls have been estimated at $8.9 billion in the ARNG and $3.1 billion in the USAR. See Reserve Forces Policy Board, "Fiscal Year 1984 Readiness Assessment of the Reserve Components," forthcoming from the Office of the Secretary of Defense. The higher costs of both reserve personnel and equipment planned by the Administration must be considered during a period of modest or no real growth in defense spending. Although the Congress has been very supportive of reserve improvements during past budget debates, future improvements will certainly prove more difficult under pending constraints.

TABLE 2. ARMY REQUIREMENTS AND PLAN FOR FULL-TIME SUPPORT PERSONNEL IN THE SELECTED RESERVES, FISCAL YEARS 1985-1990 (End strength in thousands)

Component	1984 Actual	1985 Budget	1986	1987	1988	1989	1990	Change in AGR 1985-1990
USAR								
Requirement	30.0	31.7	34.1	37.1	40.5	43.7	47.0	15.3
Planned strength	23.9	26.7	29.6a/	32.9	36.5	39.8	43.1	16.4
Full-time strength as percent of end strength	8.6	9.3	9.8	10.5	11.1	11.8	12.6	4.0
ARNG								
Requirement	62.6	64.9	72.2	72.3	73.8	74.2	78.1	13.2
Planned strength	41.6	45.8	54.7a/	65.1	72.9	78.1	78.0	32.2
Full-time strength as percent of end strength	9.6	10.4	12.1	14.0	15.2	15.8	15.6	6.0

SOURCE: Congressional Budget Office based on U.S. Army data.

NOTE: Figures include Active Guard and Reserve (AGR), civilian technicians, and active-duty personnel assigned to reserve units. For the period 1986-1990, all planned increases are in the AGR category of personnel.

a. These figures represent the Army's planned strength for full-time personnel included in the fiscal year 1986 budget submission (February 1985). The 1986 DoD authorization conference report, however, allows fewer AGR personnel than are included in the above table.

Although peacetime training can often be accomplished by pooling equipment among units (or by substituting older equipment), during a mobilization many reserve units would probably be short of the equipment required for deployment. The Army plans to remedy this problem in part by assigning equipment prepositioned in Europe (known as POMCUS stock) to early-deploying units and redistributing the residual stocks left behind in the United States to later-deploying reserves. To date, however, these plans have not been presented in detail. Thus, considerable uncertainty remains as to whether reserve units can be equipped to meet their requirements.

Problems also exist in coordinating deliveries of equipment. Since many of the support missions required by active units would be performed by reserves, giving modern equipment to active units, but not to the reserves, could render reserve support ineffective. The Army is beginning to address this problem by setting up regional training sites equipped with special tools and training devices to support modern equipment.

CHAPTER II

ASSESSING ARMY RESERVE RECRUITMENT, RETENTION, AND READINESS

Since the Army's warfighting plans depend critically on the reserve forces, their capabilities are important in assessing the Army's ability to execute its plans. In particular, early-deploying reserve units must be well prepared in peacetime since they will not have much time to improve their capability following a decision to mobilize.

Ideally, a measure of capability would include all of the following criteria: force structure (or the number and size of units), modernization (the technical or state-of-the-art level of equipment), peacetime readiness (how well the units can perform their missions with little warning), and sustainability (or the length of time reserve units can be expected to have enough equipment and personnel to be successful in combat). Unfortunately, the published indicators of force capability do not incorporate these criteria entirely. Thus, any assessment of the reserves must be partial in nature, indicating strengths and weaknesses rather than absolute capabilities. This chapter will discuss assessment in terms of personnel, unit readiness, and deployment capability.

PERSONNEL TRENDS

The active Army and reserve components have both been very successful in reversing the personnel declines of the late 1970s and meeting their recent goals for recruiting and retention. The reserves have not only met their overall strength targets, but have also improved the experience level of their career force and the quality of their recruits.

Retention

The ending of the draft in 1972 caused a sharp decline in Army reserve strength, as the pool of draft-motivated "volunteers" to the reserves

disappeared. 1/ Between 1970 and 1978, total personnel in the two selected reserve components fell from 670,000 to 527,000. This trend was reversed beginning in 1979, and by the end of fiscal year 1984 total reserve strength had reached almost 710,000 personnel. Although a number of factors contributed to this reversal, the dramatic rise in the percentage of personnel remaining on reserve duty after completing their initial obligations is probably the most significant. 2/

This increase in retention has led to a shift toward more experienced personnel--especially in the enlisted ranks. As shown in Table 3, between 1979 and 1984, the ARNG and the USAR increased the number of enlisted personnel with over 10 years of service (active and reserve service combined) by 39,000 and 23,000, or 59 percent and 70 percent, respectively. Although the numbers of junior personnel (with 10 or less years of service) also rose substantially (by 85,000 in both components combined), the percentage growth for this group was less--18 percent in the ARNG and 33 percent in the USAR. During the same period, an even more pronounced shift occurred in the active service; there, the number of less-experienced personnel actually fell by 2 percent, while the number of those with over 10 years of service rose by 18 percent. Thus, the average soldier in today's total Army has considerably more job experience than in the late 1970s.

Quality of Recruits

While experience has increased, so too has the quality of reserve recruits. The Army, like the other services, can almost always meet its numerical requirements. Except for the ARNG in 1984, both Army reserve components have met their numerical goals in recent years. Attracting enough high-quality male recruits, however, is frequently difficult.

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1. Although the draft ended in 1972, the transition period to an "all-volunteer" force is still taking place, since the first volunteer cohorts have not yet served a "full" 20-year career. Practically speaking, however, the effects of the draft on the selected reserves were complete after six years when the last group of draft-motivated reservists completed their obligations.

2. The proportion of reservists who reenlist after completing their initial six-year commitment has more than doubled since the ending of the draft. Moreover, with the decline in the number of volunteers without previous military experience, the reserves turned to the pool of active-duty separatees for their recruiting needs. These prior-service recruits also have reenlisted in the reserves at higher rates. Finally, additional financial incentives--such as enlistment and reenlistment bonuses--have led to gains in the numbers of enlisted personnel choosing to remain in reserve status. For a review of reserve reenlistment behavior, see David W. Grissmer and Sheila N. Kirby, *Attrition and Retention in the Army Reserve and Army National Guard: An Empirical Analysis* (Santa Monica, Calif.: The Rand Corporation, March 1985), pp. 70-77.

TABLE 3. COMPARISON OF YEARS-OF-SERVICE PROFILES FOR ARMY ACTIVE AND RESERVE ENLISTED FORCES (In fiscal years 1979 and 1984)

	Number of Enlisted Personnel (in thousands) and Percent of Strength					
	1979		1984		Change 1979-1984	
ARNG						
Total enlisted personnel	308		392		84	
Ten or less years of service	242	79	287	73	45	-6
Over ten years of service	66	21	105	27	39	+6
USAR						
Total enlisted personnel	153		216		63	
Ten or less years of service	120	79	160	74	40	-5
Over ten years of service	33	21	56	26	23	+5
Active						
Total enlisted personnel	657		667		10	
Ten or less years of service	550	84	541	81	-9	-3
Over ten years of service	107	16	126	19	19	+3

SOURCE: Office of the Assistant Secretary of Defense for Manpower, Installations, and Logistics.

Table 4 compares male recruits (active and reserves) who have not had prior military service on the basis of their education and recent results of mental aptitude tests. 3/ The percentage of male reserve recruits with high school diplomas increased from 1981 to 1984 in the active service and also in the reserves. The results are greatest, however, in the active service, where the percentage holding high school diplomas increased from 78 percent in 1981 to 89 percent in 1984. In the USAR, the comparable percentages were 55 in 1981 and 77 in 1984.

3. These measures are the most commonly used for measuring recruit quality. Among the higher-quality groups the rate of attrition--or failure to complete the first term of enlistment--is roughly half of that of non-high school graduates or recruits scoring lower on mental aptitude tests.

TABLE 4. COMPARISON OF ARMY ACTIVE AND RESERVE NON-PRIOR-SERVICE MALE RECRUITING RESULTS, FISCAL YEARS 1981-1984 (In percent)

Measure of Recruiting Success	1981			1982		
	Active	USAR	ARNG	Active	USAR	ARNG
Male Recruits with High School Diplomas	78	55	60	84	65	68
Mental Category						
I-II	33	23	23	37	25	28
III	48	54	63	50	62	63
IV	18	23	13	13	14	12

(Continued)

Similar patterns are found for recruits scoring in the lowest of the acceptable categories (category IV) on the Armed Forces Qualifying Test (AFQT), a mental aptitude test taken by all new recruits (see Table 4). From 1981 to 1984, the active and reserve forces all show a decline in the percentage of category IV recruits. Nonetheless, the active recruits have a quality edge by this measure too. The reserves have recruited an average of 27 percent in categories I and II (the two upper mental categories), while the active component has recruited an average of 38 percent in the top two mental categories over the 1981 through 1984 period.

One can argue that most reserve recruits should be at least as qualified as active recruits since many would be needed for deployment with (or in support of) active units at an early point if a mobilization should begin, but would have little time to train. The issue of recruit quality has not been fully resolved for either the reserves or the active forces. Nonetheless, the recent upgrading has been substantial. 4/

4. Goals for reserve recruit quality have usually been lower than for active recruiting. Between 1982 and 1984, the ARNG goal for male high school graduates ranged from 65 percent (1984) to 77 percent (1983). The goal in the USAR ranged from 65 percent (1982) to 71 percent (1983). During the same period, the goal for the active Army was raised from 81 percent (1982) to 90 percent (1984).

TABLE 4. (Continued)

Measure of Recruiting Success	1983			1984		
	Active	USAR	ARNG	Active	USAR	ARNG
Male Recruits with High School Diplomas	86	74	62	89	77	67
Mental Category						
I-II	41	29	28	41	32	25
III	50	56	65	51	57	67
IV	9	15	7	8	12	7

SOURCE: Congressional Budget Office based on data from the Office of the Assistant Secretary of Defense for Manpower, Installations, and Logistics.

Other Manpower Goals

Despite these improvements in the quality and career experience of personnel, not all reserve manpower goals have been met. In particular, the reserves have found it difficult to obtain the desired mix of experience. The Army targets its enlisted reserve recruiting programs toward two populations--those with and without previous military service. (The former are termed prior-service, or PS, recruits and usually serve between three and six years on active duty before joining a reserve unit. The latter are non-prior-service, or NPS, recruits, who join the reserves with no military experience.) Recently, the Army has sought a less experienced mix of recruits to help maintain a balance between junior and senior personnel (see Table 5). Between 1981 and 1983, the goals for NPS recruits rose from 53 percent to 75 percent of all recruits in the ARNG, and from 47 percent to 54 percent of all recruits in the USAR. In most cases, however, these goals have not been met. In 1984, the ARNG reduced its target to 55/45 percent for NPS/PS recruits. This percentage mix was achieved, but the total number of ARNG recruits fell short of the objective by 14,000. Similarly, the USAR was also unsuccessful in achieving its 1984 NPS goal, falling short of it by 5,000 recruits.

TABLE 5. PRIOR-SERVICE AND NON-PRIOR-SERVICE RECRUITS: COMPARISON OF GOALS WITH RECRUITING RESULTS, FISCAL YEARS 1981-1986

Recruits	1981		1982		1983		1984		1985	1986
	Goal	Actual	Goal	Actual	Goal	Actual	Goal	Actual	Goal	Goal
USAR										
Prior Service										
Percent	53	53	50	53	46	53	46	59	54	50
Thousands	33.4	36.0	33.4	39.4	29.7	39.5	28.5	41.2	37.9	37.5
Non-Prior Service										
Percent	47	47	50	47	54	47	54	41	46	50
Thousands	30.3	31.9	33.0	35.1	34.7	34.9	33.5	28.3	32.3	37.5
Total Recruits										
Thousands	63.7	67.9	66.4	74.5	64.4	74.4	62.0	69.5	70.1	75.0
ARNG										
Prior Service										
Percent	47	46	43	46	25	49	45	46	44	44
Thousands	45.1	43.9	41.0	44.0	22.0	43.5	50.0	39.4	37.9	44.0
Non-Prior Service										
Percent	53	54	57	54	75	51	55	54	56	56
Thousands	50.6	52.4	55.0	51.5	67.0	45.5	60.0	46.1	49.0	55.0
Total Recruits										
Thousands	95.7	96.3	96.0	95.5	89.0	89.0	110.0	85.5	86.9	99.0

SOURCE: Congressional Budget Office based on data from the Office of the Assistant Secretary of Defense, Manpower Requirements Reports for Fiscal Years 1981 through 1986.

To date, these shortfalls in NPS recruiting have not prevented the reserves from reaching the average strength authorized by the Congress. (Higher than expected career retention and a reduction in the numbers of recruits failing to complete initial training are two reasons for this success.) Therefore, the failure to meet these goals may not be critical, and does not detract significantly from the improvements in numbers and quality of recruits achieved over the past few years.

MEASURES OF UNIT READINESS

While the Army has thus far been successful in recruiting and retaining the overall numbers of reserve personnel necessary to support an expansion of the reserve components, assessing the overall capability of the reserves is a more difficult task. This study focuses on one key dimension of capability--unit readiness. (A "unit" is typically company-size, including 90 to 150 personnel.)

Readiness in reserve units is influenced by many factors. Some factors, such as training schedules, are primarily determined at the unit level. Others, such as equipment distribution and mission assignment, are usually set by Army-wide policies. The principal measures of unit readiness are the condition ratings presented in the UNITREP (Unit Status and Identification Report). This system, discussed in detail below, compares the on-hand numbers of personnel and equipment with the unit's wartime requirements. It also provides measures of equipment condition and estimates of the training time that would be required for a unit to become "fully ready."

Measuring reserve readiness with UNITREP is complicated by the need to take account of budgetary constraints that limit most Army units (both active and reserve) to less equipment and personnel than their wartime requirement. The Army's mobilization plans evidently assume that most of these shortfalls would be filled out during the early stages of a war. To manage these shortages in peacetime, the Army uses a four-tier allocation plan called ALO (or Authorized Level of Organization). ALO-1 designates that a unit is authorized 100 percent of its wartime requirements. ALO-2 and ALO-3 designate units with resource authorizations of 90 percent and 80 percent of wartime requirements. ALO-4 designates units authorized 70 percent or below of their requirements.

Since the UNITREP measures discussed below are measured against wartime requirements, a unit's ALO affects some of its ratings. In general,

the lower a unit's ALO, the lower will be its reported personnel and equipment-on-hand readiness measured against its wartime requirements. As a result, the following discussion of readiness measures portrays the peacetime condition of active and reserve units, which is important during the first days of a war. An evaluation of what would happen in the weeks after a war breaks out would require a detailed analysis of the Army's mobilization plans (including such elements as the redistribution of personnel and equipment between units following a decision to mobilize) and therefore is beyond the scope of this study.

Condition Ratings

The UNITREP system includes four categories of condition ratings (or C-ratings): personnel, equipment-on-hand, equipment condition, and training. C-ratings range from C-1 ("fully ready") to C-4 ("not ready"). For example, to be rated C-1 in the personnel category a unit must have at least 90 percent of its wartime requirement, and at least 90 percent of those personnel must be fully trained in the jobs to which they are assigned. Generally, a unit that falls below 70 percent of its requirements for personnel or 60 percent for equipment must report the lowest rating, C-4. In addition to these four specific ratings, the unit is given an overall rating--generally the lowest of the four C-ratings. The accompanying box defines the various categories and ratings.

Limitations of the C-Ratings. The C-ratings are subject to a number of limitations. For example, the training rating reflects largely the judgment of each unit commander regarding the number of weeks he would require to achieve "fully ready" status. Since many reserve units are well below their wartime levels in personnel and equipment, it is difficult to judge how much training would be required. Some critics believe that the training ratings have an optimistic bias, reflecting the reserve unit commander's "can do" attitude as much as his unit's readiness.

Although the on-hand personnel and equipment C-ratings are less subjective than training ratings, they also have shortcomings. Perhaps the most important of these is that C-ratings cannot capture the effects of equipment modernization. When new Army equipment--such as the M1 tank--is first introduced into a unit, that unit's requirements immediately change to reflect the new tank, even though tank battalions do not all receive new M1s simultaneously. As a result, some battalions may show C-4 "not ready" ratings for equipment-on-hand, when in fact they have a full complement of older M60 tanks. The equipment-on-hand ratings of many Army units have fallen significantly during recent years as the pace of

CONDITION RATINGS

Definition of Categories

Personnel. The lower of (1) the percentage of total wartime requirements filled, or (2) the percentage of positions filled by personnel qualified in their military occupational speciality.

Equipment-on-Hand. The percentage, or fill-rate, of high-priority equipment items in a unit's inventory, measured by comparing on-hand stocks with authorized levels defined in the unit's Table of Organization and Equipment (TOE).

Equipment Condition. The percentage of high-priority equipment items judged ready to perform their primary missions on a sustained basis.

Training. The number of weeks required for a unit to reach fully trained status following mobilization. The unit commander determines this rating.

Overall. Generally, the lowest of the four specific rating categories. Unit commanders may, however, adjust this rating up or down depending on other factors, such as recent proficiency test scores.

Criteria for Ratings

Category	C-1	C-2	C-3	C-4	
Personnel (percent)	90	80	70	less than	70
Equipment-on-Hand (percent of items above 90 percent fill-rate)	90	80	65	less than	65
Equipment Condition (percent of high-priority equipment rated mission capable)	90	70	60	less than	60
Training (weeks required)					
Division, Brigade, Battalion	0-2	3-4	5-6	over	7
Company	0-1	2	3-4	over	5

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modernization has quickened. But many observers would argue that in some instances overall combat capability has actually risen since the new equipment is usually more effective than the weapons being replaced.

Finally, there are limitations in the coverage and timing of reserve readiness reporting. While 90 percent of the ARNG units are required to report C-ratings, only 50 percent of the USAR units are required to do so, including all USAR units scheduled to deploy overseas. Furthermore, most reserve units are required to report their readiness only every six months--in April and October. (The ARNG recently began voluntary reporting on a quarterly basis.) These "snapshots" may not accurately portray the average condition of a unit. In particular, the October reports are usually made shortly after the summer training period, when unit readiness is at a peak.

Trends in Condition Ratings. Despite their limitations, C-ratings still offer the best indicators of the ability of Army reserve units to perform their missions. Since the specific C-rating data are classified, this study presents only a summary of the recent trends. Data for active units are also shown for comparison. In most cases, the results are from the April 1982 through October 1984 period.

The recent C-ratings indicate that, on average, reserve units are much less ready than active units to perform their missions. The overall C-ratings for fiscal years 1982 through 1984 show that most active units are rated C-2 ("substantially ready") or C-3 ("marginally ready"). By contrast, most reserve units are rated C-3 or C-4 ("not ready"). Nor has this pattern changed appreciably over the past three years despite the infusion of additional resources into the reserves.

The overall C-ratings normally represent the lowest of the four category ratings for each unit, and hence do not reflect changes in other categories. For example, while the ratings for the personnel and training categories have improved, the ratings for equipment have declined. A more reasonable measure of improvement is the change in the percentage of units rated C-3 ("marginally ready") or better, since the Army probably would not deploy units rated C-4. Table 6 shows these results for 1983 and 1984.

Moreover, in comparing the USAR and the ARNG, the changes in personnel readiness have been uneven across components. The large increase experienced in the ARNG has raised personnel readiness close to that of the active forces. At the same time, despite a 5 percent increase in the units rated C-3 or better, personnel readiness in USAR remains well below that of the active forces with over one-half of the units rated C-4 or "not ready." This is cause for concern because a large percentage of the

Army's support forces scheduled for deployment in the first 30 days of a war would come from the USAR.

The positive changes in reserve training readiness, although modest, are consistent with the increased use of full-time personnel to provide training support in reserve units.

TABLE 6. COMPARISON OF CHANGES IN THE PROPORTION OF UNITS RATED C-3 OR BETTER, RESERVE VERSUS ACTIVE FORCES, FISCAL YEARS 1983-1984

C-Rating Category	Percentage-Point Change Since 1982	
	1983	1984
Overall		
USAR	-4	-3
ARNG	-3	-7
Active	-2	-12
Personnel		
USAR	N/A	+5
ARNG	+13	+17
Active a/	0	0
Equipment-on-Hand		
USAR	-8	-8
ARNG	-4	-7
Active	-15	-25
Training		
USAR	+2	+4
ARNG	+3	+5
Active a/	0	0
Equipment Condition		
USAR	-17	-19
ARNG	-3	-4
Active	-3	-3

SOURCE: Congressional Budget Office based on UNITREP data for April 1982 through October 1984.

NOTE: N/A = not available.

a. Active-force readiness in personnel and training has been high throughout the 1982-1984 period. Thus, no changes are indicated.

In the equipment-on-hand category, however, readiness has fallen over the period 1982 to 1984. In the active force, the problems associated with delivery of new equipment discussed above probably explain much of the large decline in the equipment-on-hand ratings. But in the reserves, the C-ratings have also declined, though not as dramatically. Today, about one-half of all reserve units in both USAR and ARNG continue to have C-4--or "not ready" in equipment-on-hand--ratings. This is surprising since one expected result of modernization is to free up equipment no longer needed by active units, thus allowing reserve inventories to grow. Similarly, C-ratings for the condition of reserve equipment--indicating the amount of high-priority equipment able to perform its mission--have fallen, most significantly in the USAR. This trend may reflect problems in maintaining the equipment being passed on to the reserves.

Condition Ratings for Early-Deploying Units. While the peacetime readiness of all the reserves is important, readiness of early deploying units is especially critical. CBO examined the C-ratings for "roundout" units and, in a more general way, for all early deploying units.

The Army's plans call for some ARNG units--called "roundout" units--to fill out active divisions early in a war. CBO compared the average C-ratings (as of April 1984) for 17 ARNG roundout battalions with the corresponding ratings for all active combat and combat support units. Table 7 displays the ratios of active to roundout C-ratings. Since lower numerical C-ratings indicate higher readiness, ratios of less than 1.0 in Table 7 indicate that reserve units are less ready than active units.

TABLE 7. RATIOS OF AVERAGE C-RATINGS FOR ACTIVE UNITS TO THOSE OF ARNG ROUNDOUT UNITS, BY READINESS CATEGORY, FISCAL YEAR 1984

C-rating Ratio	Overall	Personnel	Equipment-on-Hand	Training	Equipment Condition
Active/ Roundout	0.85	0.91	1.15	0.71	0.99

SOURCE: Congressional Budget Office based on UNITREP data for April, 1984.

NOTE: Ratios compare average C-ratings using data from April 1984. Active-unit data include combat and combat support units; ARNG roundout data include ratings for 17 battalions. The numerator and denominator of each ratio was computed by weighting the number of units in each C-rating category as follows: C-1 = 1; C-2 = 2; C-3 = 3; C-4 = 4, and dividing by the total number of units.

The C-rating ratios for active over roundout units imply that, overall, roundout units are less ready, though not dramatically so. These 17 units are lower, on average, by 15 percent than active units in overall readiness. There are differences by category, however. In the categories for personnel and equipment condition, roundout units appear similar in status to the average active unit. In the equipment-on-hand category, the ratio suggests that roundouts actually exceed active units in readiness. This result is probably explained in part by the modernization problem described earlier--namely, that active-force requirements are changed before all new equipment deliveries have been completed. Only the training category ratio suggests that roundout units are substantially less ready than active units. Given the large differences in training time available to active and reserve units, this result is intuitively reasonable.

Roundout units are one type of early-deploying unit with particuliarly high priority. A detailed analysis of all early-deploying units and their readiness status was not practical because of a lack of data. CBO did, however, examine the authorized levels of organization (ALO) for these units as of January 1984. The ALOs presumably reflect the Army's desired pattern of resource levels among reserve units relative to their deployment status.

The ALO structure for the ARNG indicates that the early-deploying units (defined as those scheduled to deploy within 30 days of a decision to mobilize) have somewhat higher authorizations than do the late-deploying units. (Roundout units are an exception; their ALOs are considerably higher). In the USAR, there are virtually no differences between the two groups, which suggests that the Army's efforts to improve reserve readiness may not have been strongly linked to how critical its mission is in the early days of a war. Instead, these even distribution patterns may reflect the Army's attempts to provide adequate training resources for all reserve units during peacetime regardless of their deployment status.

In sum, there is evidence that the Army has not raised the peacetime readiness of the early-deploying units significantly above that of the late-deploying units--especially in the USAR. Even the roundout units are modestly less ready than the actives. This raises a major concern about the ability to deploy reserves on time--another important measure of readiness.

Reserve Deployment Capability

Can the Army meet its NATO commitment, especially in the early days of a war? Whether the Army can fulfill its plans for a full-scale deployment of

reserve forces cannot, of course, be known in advance with complete certainty. It is possible, however, to assess the Army's deployment plans for reserve forces sufficiently to make a judgment as to the readiness of reserves--especially in the early-deploying units.

Deployment Requirements. While the details of Army deployment requirements are classified, rough estimates can be made using certain goals that have been publicly stated, together with reasonable assumptions about the forces required to defend against the perceived Warsaw Pact threat.

In the event of a European war, the Army's goal is to provide 10 divisions to the NATO forces within 10 days following a decision to mobilize. (Army plans define the start of mobilization as "M-day"; thus, meeting this goal requires that 10 divisions be available by M-day + 10.) Currently, four active divisions are forward-deployed in Europe, leaving six U.S.-based divisions that would have to be deployed to meet this commitment. After the first 10 days, the Army would presumably commit additional divisions as needed to maintain NATO's defense against the Warsaw Pact. This study assumes that 15 active divisions (all but two of the total 17 active divisions currently available) plus three reserve divisions would eventually be deployed. 5/ CBO analyzed these forces by component to derive the numbers of active and reserve personnel that the Army would need during a NATO contingency. 6/

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5. The Administration has publicly stated the "10/10" objective. (See Department of Defense, *Annual Report to Congress, Fiscal Year 1986*, p. 224.) To counter the anticipated Pact threat, an earlier CBO study (based on an analysis of Army force balance) assumed that the Army would deploy another five active divisions--all its active divisions less the one based in Korea and the newly formed light division. After 30 days, the Pact could commit as many as 30 additional divisions to fight in Europe. How many additional NATO forces would be required is uncertain, but this study assumes that at least three Army reserve divisions would be needed. See Congressional Budget Office, *Army Ground Combat Modernization for the 1980s: Potential Costs and Effects for NATO* (November 1982).

6. CBO derived estimates of the deployment requirements assuming the number of personnel per unit equals the number in a "force division equivalent"--the Army's model for planning tactical combat forces. A force division equivalent is divided in three parts: division increments consisting of infantry or armor units; nondivisional combat increments consisting of armored cavalry, field artillery, and combat engineer units; and tactical support increments consisting of truck companies, maintenance battalions, and medical corps plus other support units. For the traditional Army infantry and armor divisions that would be used in Europe, the Army plans call for 16,000, 12,000, and 20,000 personnel to be deployed in the three categories, respectively. CBO's estimates assume that active units would be deployed first up to a total of 90 percent of active personnel available in these categories (or 15 of the 17 active divisions). Reserve units would first be used to round out and then augment active divisions, primarily in the nondivisional combat and tactical support increments.

Of particular interest are the requirements during the first 30 days of a war, the period during which the Army would be increasing its reliance on reserve forces. In the combat category, only those reserve units designated as roundouts are assumed to be required early in the war--about 10 percent of all combat units. In combat support missions (such as artillery and engineering), the percentage of reserves required would be much higher--about 60 percent. Finally, in combat service support missions (such as truck companies or medical units), 58 percent of all units would be reserves. Together, these three missions would require over 300,000 reserve personnel or 42 percent of all units--active and reserve--scheduled for deployment during the first 30 days following mobilization.

These deployment estimates are uncertain since the detailed plans are classified, but they are consistent with unclassified testimony given by Army Secretary Marsh during defense appropriations hearings in 1984. 7/

Deploying Roundout Units. Can the reserves meet these demands? In the event of a full mobilization, the Army plans to begin deploying roundout reserve units, along with their parent active divisions, during the initial 10-day period. Evidently, these roundout units would receive little, if any, additional training despite having lower training readiness than average active units. It also seems likely that these units would enter the war with the personnel and equipment already on hand plus any equipment prepositioned for them in Europe. This study therefore assumes that all roundout units with a NATO mission are available for deployment in the first 10 days.

Deploying Other Units. For all but the roundout units, the Army's plans for calling up the reserves assume a total of 10 days for alert, movement to mobilization stations, and post-training processing. Some units would also need additional time for unit training and to receive needed personnel and equipment. This study assumes that:

- A unit with an initial overall readiness rating of C-1 ("fully ready") or C-2 ("substantially ready") would require no additional time;

- A unit initially rated C-3 overall ("marginally ready") would, based on Army estimates for training readiness, require an average of

7. "In total, nearly 48 percent of the forces scheduled to be deployed to Europe in the first 30 days of conflict are National Guard or USAR." See *Department of Defense Appropriations, Fiscal Year 1985*, Hearings before the Senate Committee on Appropriations 98-897, February 9, 1984, p. 162.

14 additional days to receive equipment, personnel, and training prior to deployment in C-2 condition; 8/

- A unit rated C-4 overall ("not ready") would require an average of 60 days to achieve C-2 or better status: although 60 days is an arbitrary number, assuming a shorter time period, say 30 days, would improve the outcome only in the post-30-day period following M-day, which is probably a less critical period. 9/

Under these assumptions and based on October 1984 overall condition ratings, the percentages of required reserve units that would be available for deployment in C-2 ("substantially ready") status or better are shown in Table 8 for three categories of Army units. 10/ "Combat" forces include infantry, armor, and other front-line fighting units. "Combat support" units provide artillery, engineering, and armored cavalry support. "Combat service support" units include those for transportation, medical, and maintenance functions.

The estimates show that in the combat forces the Army can almost always meet or exceed the deployment requirements assumed in this study through M-day + 60. In both the combat support and combat service support missions, however, the M-day + 30 requirement would not be met. Under this study's assumptions, there would be shortfalls of 37 percent and 31 percent in reserve units, respectively. In both cases, the shortfalls could be made up by deploying C-3 (or "marginally ready") units without additional training. By definition, however, these units could be short as much as 40

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8. The assumption of 14 days required for a unit rated C-3 at mobilization to reach C-2 status reflects the training time criteria that the Army uses for planning reserve training. This study assumes that other needs--such as needs for equipment--could be met at the same time or could be ignored.

9. The assumption of 60 days required for a unit rated C-4 initially to reach C-2 is arbitrary. Some analysts, however, have suggested that most reserve forces, if kept at limited peacetime readiness, could be available after 60 days to provide reinforcements to active forces. This study's assumptions reflect that viewpoint. See Andrew L. Austin, "An Approach to the Army Active/Reserve Force Mix Dilemma for the 1990s and Beyond," unpublished paper (March 1985).

10. Availability estimates were made by weighting each C-rating (C-1 to C-4) by the percentage of reserve units in that status on M-day (overall C-rating data for October 1984 were used for ARNG and USAR units). The number of days required for a unit initially rated C-3 or C-4 to reach C-2 status was assumed to follow a normal distribution about the mean (14 days for C-3, 60 days for C-4) with a standard deviation of seven days. The estimates also assumed that units required for immediate deployment ("roundout" and other critical units) are so deployed, but that all other units require 10 days to complete the mobilization process (exclusive of unit training time).

percent of their wartime personnel and equipment requirements, or would require additional training to reach C-2 status.

Beyond M-day + 30, the situation would improve as the units become available at a faster rate than requirements were growing. The estimates show that by M-day + 60 both combat and combat support requirements could be met, though in combat service support the number of available units would still fall short of requirements.

Assessing how these limitations during the early stages of a conflict might affect the outcome involves assumptions about U.S. strategy and enemy capabilities that are beyond the scope of this study. Improvements in other NATO forces, as well as the gains from completing Army modernization programs, could offset these deficiencies.

These hypothetical results do not necessarily show that the Army could not meet its actual deployment plans. Those plans are not publicly available, and could involve different requirements or a greater willingness to deploy reserve units at lower readiness levels than the C-2 level assumed

TABLE 8. ESTIMATED PERCENT OF REQUIRED ARMY SELECTED RESERVE UNITS AVAILABLE IN C-1 OR C-2 STATUS BY DATE OF DEPLOYMENT: M-DAY + 30 TO M-DAY + 60

Number of Days After Mobilization	Type of Unit (In percent available)		
	Combat	Combat Support	Combat Service Support
30	100	63	69
40	90	65	68
50	100	78	68
60	100	100	88

SOURCE: Congressional Budget Office.

NOTE: Availability is estimated by assuming: (1) units rated C-1 or C-2 overall are available immediately, (2) units rated C-3 overall on M-Day receive sufficient post-mobilization training to reach C-2 status by date of deployment, and (3) units rated C-4 on M-Day require an additional 60 days to receive equipment and personnel before completing unit training. Requirements assume 10 active divisions are deployed within 10 days after M-Day, and 15 active divisions plus three reserve divisions are eventually deployed.

here. But the results do show that under a reasonable set of assumptions--consistent with unclassified information about mobilization requirements--the reserves would have difficulty meeting requirements, especially for early deploying forces that would provide key combat support and combat service support units. Perhaps for this reason, further improvements in the Army's reserve forces are included in the Administration's plans.

CHAPTER III

EXPANDING THE ARMY RESERVES: ISSUES AND COSTS

The previous chapter showed that during the past four years substantial improvements have been made in the Army's reserve forces. But the discussion also indicated some potential problems in further expansion of the reserves, particularly if the role of the reserves in the early-deploying forces is to be increased.

This chapter focuses on the equipment and manpower issues that may confront the Army as the reserve components continue to grow. In the area of equipment, the reserves will continue to require more modern equipment if they are expected to be quickly integrated into active divisions after the start of a war. Similarly, the personnel and training readiness of many units will need to be kept high during peacetime--implying that reserve manpower levels and training effectiveness must be raised to levels approaching those of the active forces.

Recognizing today's limits on reserve capability, the Administration is planning to increase spending to improve reserve readiness. Distribution of modern equipment is scheduled for some reserve units with critical roles in the mobilization plan. Manpower increases are planned, both to support new missions being transferred from the actives and to provide full-time support personnel for all reserve units. This chapter presents these initiatives along with estimates of their costs.

EQUIPMENT

Traditionally, reserves have been given fewer and older weapons than the actives--a policy reflecting the historical use of reserves as a back-up force only. Even today, many items of equipment enter the reserves only by being "handed down" from active units. This Administration, however, has begun to place new equipment directly into reserve units as part of its overall modernization program. The Congress has supported and encouraged this practice, believing that if reserves are to function as well as their counterparts in the active forces, they should be comparably equipped.

Costs of Equipment

As shown in Table 9, the costs of the Administration's procurement plans in current dollars are estimated to be $2.5 billion and $2.7 billion for fiscal years 1986 and 1987, respectively. Included in these costs are monies to purchase 120 of the new M-1 tanks and $255 million to modernize the older M60 tanks already in reserve units. Also included are funds to purchase 18 AH-64 Apache attack helicopters and 117 Bradley Fighting Vehicles--both the newest types of equipment. At these levels, equipment spending for the Army reserve components would be 11 percent of all Army procurement planned for fiscal years 1986 and 1987. In addition, the reserves are to receive older equipment from the active forces as they receive new deliveries of equipment.

TABLE 9. PROJECTED COSTS OF ARMY EQUIPMENT FOR THE SELECTED RESERVES (By fiscal year, in millions of current dollars)

Weapon Category	1986	1987	1988	1989	1990	Total 1986-1990
Aircraft/Missiles	672	844	909	996	1,084	4,505
Weapons/Tracked Vehicles	715	434	689	748	814	3,400
Trucks and Other Support Vehicles	279	451	437	479	521	2,167
All Other	786	988	1,065	1,177	1,281	5,297
Total	2,452	2,717	3,100	3,400	3,700	15,370

SOURCE: Fiscal years 1986 and 1987: Procurement Programs Annex (P-1R) Department of Defense, Fiscal Year 1986. Fiscal years 1988 through 1990: CBO estimates based on the most recent five-year defense plans for Army procurement, assuming budget shares of 20 percent for the Army of total DoD procurement and 11 percent for the Army Reserve components of total Army procurement budgets. For 1988 through 1990, the distribution of costs by weapon category is assumed to be the average of the distributions in the 1986 and 1987 plans.

Beyond 1987, the Administration's plans for further purchases of reserve equipment have not been publicly presented. Using the long-range procurement plans included in the February 1985 five-year defense plan (1986-1990), CBO estimated the cost of reserve equipment beyond 1987, assuming that reserve procurement budgets maintain their share of all Army procurement (see Table 9). Total Army procurement--which is also not publicly presented--is assumed to be 20 percent of all DoD procurement included in the most recent five-year defense plan.

Although this method is arbitrary, it reflects a procurement pattern that maintains the share of modern equipment for the reserves relative to the active component. Given the large increases in strength planned for the reserves during the remainder of the decade, this assumption may be conservative, reflecting only the minimum equipment costs necessary to ensure that reserve units maintain limited comparability with the active forces.

Under this assumption, the estimates show that equipment costs for the USAR and ARNG would rise to $3.7 billion (in current dollars) by 1990, and total approximately $15.4 billion over the five-year period 1986-1990. These estimates could be high since they are based on the February 1985 budget submission. Although the Congress and the Administration have made substantial reductions in that budget, it still represents the Army's only detailed plan.

Shortages Under the Administration's Plan

Even with the Administration's planned purchases, the reserves are likely to remain short of their wartime equipment requirements. But comparing a reserve unit's equipment requirements with its current inventory ignores several important features of the Army's equipment plans that make it difficult to measure reserve shortages accurately.

Problems in Measurement. To save money during peacetime, many reserve units share common equipment pools for training purposes. Thus, some proportion of units receive C-4 ratings in equipment-on-hand (or "not ready"), even though most units are still able to accomplish their part-time training.

To meet wartime needs, the Army maintains various equipment depots and war reserve stockpiles. Some of this equipment would provide replacements for losses suffered early in a war, but some would also be distributed to the reserves in the event of a mobilization, presumably on the basis of

deployment schedules in accordance with the "first-to-fight, first-to-equip" policy. The Army also prepositions equipment in Europe (the POMCUS program), and some reserve units are designated to receive this equipment upon arrival overseas. Still other reserves would receive equipment left behind by the active units designated for POMCUS equipment.

These factors suggest that today's shortages reported by reserve units may overstate the reserve equipment problem. On the other hand, many reserve units substitute older (and generally less capable) equipment for the newer equipment that is authorized but not available to the unit. Many of these substitute items are evidently counted against wartime requirements, even though they could not be supported or deployed if there were an actual mobilization. 1/

For all these reasons, there is no simple way to determine how much new equipment is needed to fill the Army's reserve requirements. To provide a partial view, the section below discusses the Army's estimates of the dollar value of current inventories versus wartime requirements for approximately 300 items. 2/ Although not all equipment is considered, these estimates cover most of the weapons viewed as critical for accomplishing reserve unit missions.

Distribution of Shortages by Type of Equipment. The largest percentages of shortages currently are in the categories of weapons/tracked vehicles and telecommunications equipment (see Table 10). With the procurement planned for 1986 and 1987, the Army plans to reduce shortages substantially by the end of 1988 in the weapons and tracked vehicles category--from over 50 percent to 25 percent or below. The shortfalls in telecommunications equipment, however, are expected to remain high through 1988--over 50 percent in both components.

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1. For a complete discussion of the equipment substitution issues, see Reserve Forces Policy Board, Office of the Secretary of Defense, *Fiscal Year 1983 Readiness Assessment of the Reserve Components* (June 1984), chap. 5.

2. The use of dollar values, rather than item-by-item counts, avoids the data classification problem. But because new and old equipment items are combined it is difficult to know the severity of shortages based on dollar values alone. Moreover, in practice older (and usually cheaper) equipment is often substituted for newer and more expensive items. As a result, the shortages expressed in dollar values may not accurately reflect the total shortages measured against the requirements for modern equipment. For a discussion of this issue, see Department of Defense, *National Guard and Reserve Equipment Report for Fiscal Year 1986*, analysis of Annex to Volume II (March 1985), p. 1.

For the other major equipment categories, the picture is brighter. Aircraft shortfalls, modest in 1984, are planned to be completely eliminated by 1988, while the trucks and other support vehicles category should remain about 25 percent short throughout the period.

Problems for Support Units. The shortfalls of equipment discussed above may cause special problems for some reserve units. Reserve units are scheduled to perform maintenance and other support missions for many active-duty units. As the active units receive new types of equipment, reserves also need to receive it in order to be trained on the equipment they would support during a war. But Army procurement plans suggest that progress toward modernization in the active and reserve components will vary considerably depending on the mission and weapons system involved.

CBO examined the modernization plans for three major weapons: tanks, armored personnel carriers, and attack helicopters. In armored divisions, the M1 tank and the improved M60A3 tank are projected to make

TABLE 10. ESTIMATED SHORTFALLS IN MAJOR EQUIPMENT CATEGORIES IN ARMY RESERVE COMPONENTS, FISCAL YEARS 1984 AND 1988 (In percent of dollar value of requirements)

	ARNG		USAR	
	1984	1988	1984	1988
Aircraft	15	0	25	0
Weapons/Tracked Vehicles (Includes artillery, tanks, and armored personnel carriers)	55	17	54	24
Trucks and Other Support Vehicles	27	26	41	24
Telecommunications Equipment	75	58	77	66

SOURCE: Department of Defense, *National Guard and Reserve Equipment Report for Fiscal Year 1986*, Analysis of Annex to Volume II: Force Readiness Report (March 1985).

up 70 percent of all tanks in the active forces at the end of fiscal year 1986. In contrast, only 14 percent of the tanks in the reserves will be modern at that time. By 1992, however, assuming that Army procurement plans through 1990 are realized, all tanks in both the actives and reserves will be M1s or M60A3s (see Table 11). Thus, between 1986 and 1992, the Army should be able to modernize its reserve tank battalions fully, so that all active and reserve units will have comparable experience using the same equipment. Since reserves will be able to train with the new tanks, the required maintenance and support skills (on which the active Army would depend during a war) should be developed simultaneously as modernization proceeds.

For other types of new equipment, however, the situation will be much different. By the end of fiscal year 1986, the new armored personnel carrier (the Bradley Fighting Vehicle or BFV) will comprise only 10 percent of the active inventory of infantry carriers, and only 2 percent of the reserve inventory (see Table 11). If the Army's procurement objective of 6,882 BFVs is reached by 1990, then the active forces will be fully modernized by 1982, but the reserves will still have upgraded only 8 percent of their personnel carrier fleet. This would mean a significant mismatch of experience

TABLE 11. EQUIPMENT MODERNIZATION IN ACTIVE AND RESERVE COMPONENTS, 1986-1992 (In percentages of new and old tanks, armored personnel carriers, and attack helicopters)

Equipment Type	1986		1992	
	Active	Reserve	Active	Reserve
Tanks				
Old (M60A1)	30	86	0	0
New (M60A3, M1)	70	14	100	100
Armored Personnel Carriers				
Old (M113)	90	98	0	92
New (BFV)	10	2	100	8
Attack Helicopters				
Old (Cobra)	98	100	50	95
New (Apache)	2	0	50	5

SOURCES: Department of Defense, *National Guard and Reserve Equipment Report for Fiscal Year 1986* (March 1985); Department of Defense Procurement Programs (P-1R) (February 1985); Congressional Budget Office.

between active and reserve units operating and maintaining the same equipment. Of course, the Army could alter the distribution of BFVs to include more reserve units, thus leaving the active forces with both new and old equipment.

Finally, the Army's modernization plans for attack helicopters could result in even greater discrepancies between active and reserve units. Assuming the current Army procurement of 515 Apache AH-64 helicopters is realized by 1990, the active forces will have modernized 50 percent of their attack helicopter fleet by 1992 (see Table 11). The Army plans to transfer the older AH-12 Cobras to the reserves, forming new helicopter units where required. By 1992, the reserve's inventory of helicopters will be almost completely made up of these aircraft--many of them over 25 years old. As with the armored personnel carriers, this dichotomy between types of active and reserve equipment could render reserve forces ineffective in providing support and maintenance for active units.

The problem could, of course, be mitigated by revising the Army's distribution plans or by increasing procurement of equipment for the reserves. The latter approach has been supported by the Congress in recent years. Increasing spending will be difficult, however, under current budgetary pressures, though the Congress may wish to review the Army's plans for allocating new procurement between active and reserve units.

Distribution of Shortages Between Early- and Late-Deploying Units. As was mentioned in the previous chapter, the Army plans to deploy over 40 percent of its forces from the reserve components during the first 30 days of a NATO war. Given this severe time constraint, distribution of equipment during peacetime should favor these early-deploying reserve units. In fact, recent Army equipment-on-hand ratings (January 1984) show no significant differences between units with different deployment dates. Because reserve units are generally equipped at lower levels than active units, this even-handed policy within the reserves suggests that many of these units expected to provide support early in a war would not have equipment stocks equal to their active counterparts. Although some surplus equipment could be transferred after mobilization, this would be costly and time-consuming. Moreover, the post-mobilization training required by reserve units deploying with active units could be affected by equipment shortages.

Costs of Meeting Today's Shortages

The Reserve Forces Policy Board estimates that, at the end of fiscal year 1984, it would cost $8.9 billion to meet the equipment shortfalls in the

ARNG and $3.1 billion to meet those in the USAR. These extra dollars would buy added equipment to meet wartime requirements, as well as new types of equipment to meet current plans.

MEETING THE ARMY'S RESERVE MANPOWER REQUIREMENTS

In addition to the costs of providing additional equipment for the reserves, the Army will face rising manpower costs as the reserve components grow toward the Army's long-run objective of 840,000 personnel by 1990. This total represents the peacetime requirement for reserve personnel included in the five-year defense plan submitted to the Congress in February 1985. Of the total planned increase of 116,000 (fiscal years 1986 to 1990), almost 50,000 would be military personnel (AGR) assigned full-time to reserve units to assist in administrative tasks and reserve unit training.

Costs Under the Administration Plan

CBO's estimates of Army reserve personnel costs under the Administration's plan are shown in Table 12. Over the 1986 through 1990 period, annual costs would rise by more than $2.0 billion in 1986 dollars, or 37 percent. Seventy percent of this increase would fund the higher levels of full-time support personnel. The remainder would pay for part-time selected reserve personnel and individual mobilization augmentees (IMAs). IMA personnel are civilians who perform between 12 and 14 days of active duty annually. IMA personnel are assigned to active units to fill key jobs needed during a general mobilization.

These estimates are based on the Army's five-year manpower plans submitted in February 1985 and adjusted for Congressional changes that will limit the full-time support personnel increases in fiscal year 1986. As a result of these changes, Army plans for 1987 and beyond may be revised downward. If this happens, the cost increases will be lower than those mentioned above.

The above discussion includes reserve military manpower costs--pay and allowances, subsistence-in-kind, travel, clothing, and retired pay accruals--and these are funded in the reserve personnel account. The costs of full-time reserve manpower in this account include only full-time personnel (AGR)--the category of personnel the Army plans to increase. The costs of military technicians--who often serve part-time in reserve units--and civilians are funded in the operation and maintenance (O&M)

account. On the other hand, active military personnel assigned to the reserves are paid from the active military personnel account. Both O&M and active personnel costs are excluded from this study. The Army plans no significant changes, however, in these personnel categories during the next five years.

Full-Time Support Personnel. Under the Administration's plan, by far the largest increase in Army reserve manpower costs would be for full-time support (AGR) personnel. The annual costs of this category of personnel would rise by over $1.5 billion between 1986 and 1990. These personnel are generally more expensive than active-duty personnel because they have more military experience. The pay and benefits (including retirement accruals) of the average person on active duty are projected to average $29,100 in fiscal year 1986. By contrast, the average pay rate for full-time military personnel (AGR) who assist the reserves is estimated to be $42,000. The difference results from the higher average entry pay grade for AGR personnel joining the reserves.

TABLE 12. ESTIMATED COSTS OF ARMY SELECTED RESERVE PERSONNEL UNDER THE ADMINISTRATION'S PLAN: FISCAL YEARS 1985-1990
(In millions of fiscal year 1986 dollars)

Component	1985 a/ Estimated	1986 b/ Budget	1987	1988	1989	1990	Change in Costs 1986-1990
Personnel							
USAR							
Part-time	1,800	1,830	1,905	1,970	2,020	2,045	705
Full-time (AGR)	460	490	590	755	910	1,070	1,515
Total	2,260	2,320	2,495	2,725	2,930	3,115	2,285
ARNG							
Part-time	2,375	2,385	2,405	2,430	2,485	2,540	370
Full-time (AGR)	865	925	1,175	1,510	1,750	1,865	2,900
Total	3,240	3,310	3,580	3,940	4,235	4,405	3,270
All Army Selected Reserve							
Part-time	4,175	4,215	4,310	4,400	4,505	4,585	1,140
Full-time (AGR)	1,325	1,380	1,765	2,265	2,660	2,935	4,415
Total	5,500	5,630	6,075	6,665	7,165	7,520	5,555

SOURCE: Congressional Budget Office.

a. Adjusted for 3 percent pay raise, Oct 1, 1986.
b. Includes average reserve strength authorizations approved for fiscal year 1986.

These substantially higher costs raise the question of how many full-time support personnel are really needed. Today, to support reserve units, the Army has 66,500 full-time personnel (including AGR, civilian military technicians, and active personnel on temporary assignment). This represents 9.3 percent of the selected reserve personnel strength at the end of fiscal year 1985, up from 7.6 percent at the end of 1983. The Army's goal is a full-time force equal to 15 percent of the selected reserve strength.

Although significantly higher than in the past, the 15 percent goal is still below the goals of two of the other services' reserve manpower programs. The Naval Reserve Force plans to have 19 percent full-time support personnel at the end of fiscal year 1985, and the Air Force Reserve plans on 24 percent. The Marine Corps Reserve, whose mission is more like that of the Army reserve components, aims to have 15 percent. By these standards, the Army's plan appears quite reasonable.

Several factors may weigh against the 15 percent goal, however. There is no clear evidence indicating how reserve readiness would be affected by reaching the 15 percent goal. Moreover, the need for further increases may no longer be as urgent as it was before the full-time support program began to grow in 1980. The Army has already introduced full-time support into roundout and other critical units scheduled to be deployed early during a mobilization. It has also developed successful "affiliation" programs to increase opportunities for reserve units to train with active units. 3/ Under these programs, reserve units are associated with active-duty units whose personnel normally spend some time planning reserve training programs--thus functioning for limited periods as AGR personnel. Finally, two alternatives may offer the same improvements in unit readiness as adding full-time personnel, but at no additional cost: additional time spent at the National Training Center (the Army's warfare training center where large-scale combat operations may be conducted with assistance from active-duty personnel) or with active units participating in realistic exercises.

Part-Time Personnel. The second largest source of higher costs is the part-time selected reserve personnel themselves. The planned growth in numbers of reserves has been supported by the Congress. Indeed, the Congress has

3. Separating the effects of different approaches to improving reserve training will always be difficult. For example, early-deploying units are affiliated with their active divisions for training purposes and thereby receive higher priority for equipment and active-duty training support. But these units also have full-time AGR personnel. Determining which factor yields larger benefits, and at what cost, has not yet been addressed by analysts.

encouraged it in recent years by cutting active manpower requests, while leaving intact the Army's requests for part-time selected reserve personnel. Aside from the growth of full-time support personnel, part-time personnel offer the only significant growth in Army manpower planned for the next five years.

The further expansion of reserves carries obvious risks. Reserves today make up 48 percent of the Army's manpower that trains regularly during peacetime, up from 42 percent in 1980. This percentage is slated to grow to 52 percent by 1990, when the Army will have more personnel in the reserves than on active duty--the first time in history that the Army's forces will have been so structured.

As the previous discussion has indicated, there is concern that reserve readiness does not match active readiness in many areas--especially in equipment-on-hand (for the ARNG and USAR) and in personnel (for the USAR). Moreover, should the Congress limit future readiness improvements--the distribution of modern equipment to the reserves or increases in the number of full-time support personnel--simply adding reserve units would not do much for overall force capability.

Other Possible Sources of Cost Increases

The above discussion has dealt only with increases in equipment and numbers of reserve personnel. But there may be other problems in expanding the Army reserve components that will call for added resources.

Special Skills. Unlike the active forces where personnel overages and shortages may be balanced by reassignment of personnel, reserve units have often had difficulty in filling positions requiring critical skills. The Army has stated that many USAR units will continue to have shortages of trained personnel in medical, aviation, maintenance, and transportation specialities beyond 1986. 4/ Of the 377 military occupational specialities listed in 1985, the USAR was short at least 10 percent of the experienced personnel required in 204 occupations, or 54 percent of the total occupations. Since the Army plans further substitution of reserve for active missions in the support areas, these shortages could get worse. While manpower levels will improve as the USAR grows, the problem of selected skill shortages may continue to limit the readiness of units expected to fight early in a war. To

4. See Department of Defense, *Manpower Requirements Report for Fiscal Year 1986* (February 1985), p. III-20.

solve these problems, the Army may need to add financial incentives or introduce new personnel programs. (For an example of the latter approach, see Chapter IV).

Recruiting Problems. While reserves have generally not had problems recruiting people either with or without prior military service, except for the skill problems noted above, the shortfalls experienced during the past year could portend future problems--especially if the size of the senior career force is limited. Solving these problems could require additional recruiters or other resources.

If the reserves continue to allow more and more senior personnel (those with over 10 years of combined active and reserve duty) to remain on

TABLE 13. COMPARISON OF PROJECTED ARMY RESERVE DEMAND AND SUPPLY OF ENLISTMENTS: FISCAL YEARS 1986, 1988, AND 1990 (In thousands)

	USAR			ARNG		
	1986	1988	1990	1986	1988	1990
Demand						
Increasing career force	73	77	72	90	96	94
Constant career force	80	87	84	100	109	108
Supply						
Prior-service	36	38	40	41	42	43
Non-prior-service	29	28	28	50	49	48
Total supply	65	66	68	91	91	91
Surplus (+)/Shortage (-)						
Increasing career force	-8	-11	-4	+1	-5	-3
Constant career force	-15	-21	-16	-9	-18	-17

SOURCE: Congressional Budget Office.

NOTE: These projections are based on a number of assumptions including the following: reserve continuation rates remain equal to those in fiscal year 1984, annual prior-service recruiting ranges from 77,000 to 83,000 (USAR and ARNG combined), reserve compensation in real terms remains equal to the fiscal year 1984 levels, youth unemployment declines from 18.8 percent in 1986 to 16.4 percent in 1990, the number of male recruits scoring in mental category IV is limited to 13 percent of all NPS male recruits, and the number of full-time reserve recruiters remains at 5,700 between 1986 and 1990.

duty, the recruiting shortfalls are likely to be quite modest. CBO's estimates show NPS recruit shortages of at most 11,000, or 14 percent, in the USAR in 1988; they also indicate only small shortfalls in the ARNG during the 1986 to 1990 period (see Table 13). The assumptions that underly these results are detailed in the Appendix.

While allowing the proportion of senior personnel to increase will aid recruiting by holding down the required number of NPS recruits, it will also produce substantial changes in the enlisted reserve force structure. By 1990, under the assumptions used, 34 percent of the reserves will have more than 10 years of service. This figure compares with an average of 27 percent today and 21 percent in 1980.

Although the increase in reserve experience has generally been viewed as a positive trend, continued expansion of the senior enlisted ranks will have drawbacks. First, it will be more expensive since older reservists tend to stay longer and receive higher pay and retirement benefits than younger members. Offsetting this somewhat is the fact that younger personnel usually require more costly training. Second, older reserve personnel tend to have more responsibilities in civilian life, which could place limits on the speed at which their units could be called up. Finally, for reservists with prior active-duty service, more seniority implies longer periods of time between active duty and reserve service and less experience in working with new Army equipment and procedures. For all these reasons, the Army may find it undesirable to continue the trend of increasing the proportion of senior personnel in the reserve force structure.

To minimize these concerns, the reserves could limit the numbers of senior personnel so as to hold down the percentage of those with over 10 years of service. This could be accomplished either by reducing the number of prior-service recruits or by controlling reenlistments in years-of-service 7 through 13. But these policies would also raise requirements for NPS recruits, increasing the risk of recruiting shortfalls.

If the Army reserves were to limit the proportion of senior personnel with over 10 years of service to today's levels--26 percent in the USAR and 27 percent in the ARNG--then CBO projects that annual shortfalls in NPS recruits would grow to between 15,000 and 21,000 in the USAR and between 9,000 and 18,000 in the ARNG (see Table 13). Shortfalls of this magnitude might be overcome in any one year through changes in recruiting policies. Over the five-year period from 1986 through 1990, however, the reserves would be forced to accept either a lower total strength or a lower quality mix of recruits than has been included in recent Army manpower plans.

Alternatively, additional resources could be devoted to achieving the Administration's goals for reserve expansion. Adding full-time recruiters to the reserve force would be one way of doing so. Other alternatives include increasing financial incentives for enlistment and recruiting more women.

How many more recruiters might be required to meet the projected shortfalls is difficult to estimate, largely because past studies of reserve recruiting have not been successful in measuring the statistical relationship between numbers of recruiters and high-quality NPS male recruits. CBO used recent data from 1981 through 1984 to estimate the average improvement in NPS supply from adding recruiters, adjusting for anticipated changes in youth unemployment and the size of the eligible population (see Appendix). Estimates of the number of recruiters necessary to overcome the projected shortfalls were then made assuming the same improvement in NPS supply from adding recruiters in the future.

The results indicate that as many as 630 additional recruiters could be required in fiscal year 1986 and beyond if the proportion of senior personnel continues to grow and only modest shortfalls occur. Beyond 1986, if the Army were to hold down the reserve career force by limiting the percentage of senior personnel to today's proportion, as many as 1,900 additional recruiters could be required eventually. Costs for these additional full-time personnel would range between $30 million and $80 million annually. This would be another potential cost--not normally identified in the Department of Defense budget--of continuing the expansion of the Army reserves.

CHAPTER IV

OPTIONS FOR IMPROVING RESERVE READINESS AND SAVING MANPOWER

The last chapter showed that the Administration's plan submitted with the February 1985 budget could require expenditures of $15 billion for equipment and $33 billion for personnel to accomplish the Army reserve expansion during 1986 through 1990. But the analysis in the preceding two chapters suggested that readiness in many units would remain well below that of the active forces. Two specific problems stand out: the high proportion of units in both the USAR and the ARNG rated "not ready" in equipment-on-hand, and the high porportion of units in the USAR rated "not ready" in personnel. Both of those deficiencies would affect the Army's ability to deploy reserve forces during the first 30 days of a war. Moreover, as the reserves continue to grow, they could face recruiting shortfalls during the coming years.

Although additional resources could solve some of these problems, the Congress is currently seeking ways to hold down defense spending as part of an overall effort to reduce the federal deficit. The Congress may wish to consider strategies that would avoid adding to planned costs or would reduce costs below current plans, while at the same time maintaining or improving the readiness of some reserve units--especially those that would be deployed early should a major war erupt.

This chapter presents two alternatives to the Administration's plan. One would provide improvements in equipment and personnel readiness in the early-deploying units, paying for these improvements by limiting the growth in full-time support personnel. The other would slow the planned growth in reserve personnel and limit growth in full-time support personnel to achieve significant savings in reserve manpower, but still include the improvements in readiness for early-deploying units.

All of the discussion in this chapter relates to the Administration's February 1985 plan, which is the only detailed plan currently available. The Congress has already approved substantial changes in that plan for fiscal year 1986 and will make additional changes in future years. But even with the changes to reserve plans for fiscal year 1986, the strategies discussed below are relevant to the Army's long-run manpower plans.

OPTION I: IMPROVE READINESS IN THE 30-DAY FORCES AND LIMIT FULL-TIME SUPPORT

This option would add equipment and reserve personnel in the early-deploying forces, but reduce the increases in full-time personnel planned for later-deploying units.

Equipment Readiness

If the Congress continues to support the Army's plans for expansion of reserve forces, it may wish to focus on policies that improve readiness in the forces being deployed within the first 30 days, while at the same time maintaining minimum training levels for the later-deploying forces. For example, to improve distribution of equipment, the Army could be directed to raise all 30-day reserve forces to ALO-2 status (90 percent of wartime requirements). While short of full wartime requirements, ALO-2 would represent a feasible but substantial improvement for many early-deploying units, which are often equipped below 90 percent of requirements. ALO-2 could be achieved by directing all new procurement for the reserves toward filling the equipment stocks of these units. Where items are short, but not currently in production, the Army could be directed to redistribute equipment from later to earlier units on the deployment schedule, while attempting to avoid reducing equipment levels below what Army studies have found to be necessary to accomplish minimum training. 1/

This approach should make the reserve equipment policies more consistent with the Army's "first-to-fight, first-to-equip" policy. As Chap-

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1. The Congress has frequently been concerned with attempts to redistribute reserve equipment stocks among other Army programs (for example, POMCUS and foreign military aid). This concern reflects a desire to ensure that all reserve units, regardless of deployment date, be able to provide realistic training. In 1980, the Army conducted a test designed to determine the minimum equipment levels required to maintain training proficiency. For the active forces, the test showed that training proficiency can be maintained with 70 percent of equipment requirements (or a C-3 rating for equipment-on-hand), provided training time is increased and more support resources (for example, training simulators) are available. A reserve study was also performed based on a survey of 128 commanders. Their recommendations concluded that the 30-day forces should be fully equipped or designated for POMCUS stocks. Later-deploying units were recommended to receive 70 percent of requirements--consistent with the active-force results. Since peacetime reserve training is frequently accomplished with less than 70 percent of equipment, these recommendations probably reflect the commanders' concern with mobilization needs as much as with training per se.

ter II suggested, the ALO-1 and ALO-2 authorizations for early-deploying units are, on average, only slightly higher than for later-deploying units. Nor do equipment allocations from new procurement seem to favor the reserves. Thus, this shift should provide a higher priority for the early-deploying units.

CBO estimates that an additional $2.6 billion beyond the funding in the Administration's budget would be required to equip all the early-deploying units at ALO-2 or above (see Table 14). This estimate is based on a 1983 Army study that estimated the cost of increasing all reserve units--early- and late-deploying--to ALO-2 at $6.6 billion. That estimate included both the costs of filling shortages to meet current ALOs and of raising all units to ALO-2. 2/

CBO made the adjustment from $6.6 billion to $2.6 billion assuming that 42 percent of all reserve units are early-deploying (see Chapter II), that about 50 percent of those units are currently authorized at levels below ALO-2 (based on 1984 Army data), and that the dollar value of the equipment shortfalls averages $3.7 million and $2.3 million per reserve unit below ALO-2 in the ARNG and USAR, respectively. These average values, expressed in 1986 dollars, were derived by dividing the total shortfalls measured in the 1983 Army study by the number of units in 1984 with authorized levels below ALO-2.

The $2.6 billion could understate costs. The 1983 Army study did not include the costs of completely modernizing reserve units consistent with the latest approved Army Tables of Organization and Equipment (TOE). Rather, it simply provided for increases in the types of equipment already present in reserve units, based on the authorizations prior to 1984. Thus, for example, the cost of filling the reserves' shortages of armored personnel carriers reflected the older M113 rather than the new Bradley Fighting Vehicle.

Moreover, the 1983 Army study also reflected only those units in existence at that time. Units have been added since and will continue to be added in future years.

On the other hand, the $2.6 billion could overstate the costs of eliminating the ALO-2 equipment shortfall in early-deploying units because it assumes that appropriations since 1983 have not reduced the shortages. But the Congress appropriated $1.2 billion in 1984 and $2.1 billion in 1985

2. U.S. Army, "Developing the Force, Level 2 Army Resource Requirements," unpublished study, January 1985.

for reserve equipment, and this procurement should reduce the shortages somewhat. And appropriations could amount to between $2 billion and $4 billion a year in 1986 through 1990. Yet, even these higher amounts may not eliminate the shortfalls in early-deploying units. Most of those sums have been or will be spent on modifications of existing equipment (for example, upgrading M60 tanks) or on modern equipment to replace old or substitute items currently on hand. Chapter III also suggests that shortfalls will remain at least through 1988 despite substantial spending over the preceding four years.

Clearly, estimating the costs of equipping the early-deploying units is difficult because the details of the Army's plans for the distribution of equipment to active and reserve units are not publicly available. Given the possible sources of error on both the low and the high sides, however, the $2.6 billion in added costs seems a reasonable estimate.

Personnel Readiness

To improve personnel readiness in units that are short of personnel with special skills, the Army could recruit and preassign to early-deploying units a pool of personnel trained in the shortage specialities. These would not be regular reservists who drill on weekends. Rather, these people would drill infrequently, perhaps only during the two-week summer training period. Hence, they would not have to be drawn entirely from the locations where units with shortages exist, but could be drawn from personnel nationwide.

The Army has developed preliminary plans for such a system, called the Individual Selected Reserve (ISR). Under this program, personnel with training in shortage specialities would train at least 12 days each year but would not be attached to specific reserve units. On mobilization, they would immediately be assigned to reserve units according to the shortages existing at the time.

Improving reserve personnel readiness by creating such a pool of trained reservists would be less expensive than adding part-time personnel--who train up to 30 days each year--to individual units. Because ISR personnel would train only 12 days per year, costs would be lower. The Army estimates that it is short of 16,000 trained personnel in the 30-day reserve forces. 3/ Assuming a phase-in period of five years, CBO estimates

3. This estimate was included in information provided by the Army regarding the proposed Individual Selected Reservist (ISR) program.

that the cost of this manpower pool would be $15 million in 1986 and would grow to $50 million in 1990 (see Table 14). These costs do not include additional incentives that might be required to recruit this pool of specialists. The five-year costs would total about $150 million (in 1986 dollars) through 1990. These costs would be in addition to those in the Administration's February 1985 budget.

Limiting Full-Time Support Personnel

While more equipment and personnel with critical skills should improve the readiness of the early-deploying units, the Congress is concerned with

TABLE 14. ESTIMATED COSTS AND SAVINGS OF OPTION I RELATIVE TO THE ADMINISTRATION'S FEBRUARY 1985 PLAN (In millions of 1986 dollars)

Category	1986	1987	1988	1989	1990	Total Five-Year Costs/ (Savings) 1986-1990
Improvements in Early-Deploying Units						
Added equipment	520	520	520	520	520	2,600
Added personnel	15	20	30	40	50	155
Total costs	535	540	550	560	570	2,755
Reductions in Full-Time Military Personnel						
10 percent limit	(70)	(290)	(630)	(890)	(1,090)	(2,970)
Nets Costs (Savings)	465	250	(80)	(330)	(520)	(215)

NOTES: Equipment costs assume a five-year pattern for procurement and exclude costs of modernizing early-deployment reserve units to latest Tables of Organization and Equipment (TOE). Units with equipment authorizations below ALO-2 are assumed to be raised to that level proportionately over the five-year period. Personnel in the trained manpower pool are assumed to be: 1986, 5,000; 1987, 7,000; 1988 10,000; 1989, 13,000; 1990, 16,000.

reducing, not increasing, defense spending. To offset the costs of increased readiness in the 30-day reserve forces, the Congress could reduce the number of full-time reserve personnel below that proposed by the Administration for fiscal years 1987-1990, following similar reductions in the 1985 and 1986 requests. Early-deploying units in both components are already fully staffed with full-time personnel. Thus, this approach would prevent further improvements in the readiness of units currently assigned late deployment dates, but would not harm the early-deploying units. Although overall reserve readiness might decline relative to the Administration's plan, the combat readiness of the 30-day forces would be improved. Given the importance of maintaining a strong defense early in a war, this trade-off may be warranted.

One approach to reducing full-time support would be to substitute individual selected reservist (ISR) personnel for full-time personnel in or planned for "overhead" jobs at division headquarters level or above. This would increase administrative workloads at the headquarters level, but should not damage the Army's attempts to improve training readiness at the unit level where full-time personnel could still be added. These substitutions would reduce the overall planned increases in full-time personnel by 5,200 in the ARNG and by 1,320 in the USAR, with corresponding increases in ISR manpower.

More substantial reductions would be possible if the Congress placed overall limits on the level of full-time reserve personnel. CBO estimates that the savings from holding Army reserve full-time manpower to today's level of 10 percent of total selected reserve strength, rather than the 15 percent goal included in the Army's February 1985 plan, would total $70 million in 1986 in the ARNG alone. 4/ By 1990, the total annual savings would reach $1.1 billion and over the entire five-year period the savings would total almost $3.0 billion in both components (see Table 14). These savings would represent a reduction from the Army's plan of 28,000 and 9,000 full-time personnel in the ARNG and USAR, respectively, offset by equal increases in part-time-drilling reservists or the ISR personnel required to man shortage specialities in early-deploying units.

In sum, over the next five years under Option I, the Congress could avoid large cost increases (costs would rise in 1986 and 1987 but decline thereafter, relative to the Administration's plan) and achieve overall savings while increasing the readiness of early-deploying units. In most cases, the

4. A 10 percent goal was evidently included in earlier Army plans. See, John A. Wickham "Discussion of Changes, Issues and Plans," *Army Times* (July 25, 1983), p. 1.

readiness levels of later-deploying units would remain at current levels. This would represent less capability for the later-deploying units relative to current plans, but would be consistent with the Army's often-stated policy of allocating resources on a "first-to-fight" basis.

As Table 14 shows, Option I could yield modest savings of $215 million over five years. Achieving larger savings would require slowing the overall growth of the reserve forces.

OPTION II: SLOW THE GROWTH OF RESERVE FORCES

If the Congress chooses to hold down overall military manpower costs during the next several years, slowing the growth in Army reserve personnel would be one way to help accomplish this objective. Moreover, until there is greater certainty regarding the Army's ability to deploy reserve units in a high state of readiness, limiting future reserve growth may be prudent. If the slowdown was combined with the improvements in the early deploying units discussed above, combat readiness in the critical early days of a war could still improve. Furthermore, slowing reserve growth would reduce demands for new recruits during a period when the Army may encounter recruiting difficulties.

One specific option for slowing reserve growth to reduce costs would be to stretch out the planned five-year expansion to ten years. This would mean that, rather than growing to a strength of 840,000 by the end of 1990, the selected reserve components would reach 796,500. In addition, this option assumes that the Congress would limit full-time manpower to 10 percent of reserve strength, while increasing equipment and critical-skill personnel for early-deploying units as was discussed under Option I.

Option II means that late-deploying units could not improve their readiness over today's levels since shortfalls in selected skills would be likely to continue and full-time support personnel would not be available. Early-deploying units should not be affected adversely, however, and, with the improvements outlined above, they should be able to increase their readiness.

CBO estimates that the annual reserve manpower savings under this option would total $390 million in 1988 and grow to $1.1 billion by 1990. Over the entire five-year period from 1986 through 1990, the manpower savings would total $4.6 billion. Net savings, after accounting for improvements in the early-deploying units, would be lower, totaling $1.8 billion over the five-year period (see Table 15).

Under this option, savings during the next five years would stem primarily from the reductions in reserve personnel relative to the Administration's plan. Savings would also occur, however, in the operation and maintenance accounts of the reserves, since fewer missions would be transferred from active to reserve status. Moreover, although some added costs would be incurred to redistribute equipment between early- and late-deploying reserve units, overall equipment storage costs (including construction of new armories to support the reserve expansion) should be lower than under the Administration's plan.

TABLE 15. ESTIMATED COSTS AND SAVINGS OF OPTION II RELATIVE TO THE ADMINISTRATION'S FEBRUARY 1985 PLAN (In millions of 1986 dollars)

Category	1986	1987	1988	1989	1990	Total Five-Year Costs/ (Savings) 1986-1990
Costs of Improvements in Early-Deploying Units a/	535	540	550	560	570	2,755
Savings from Reductions in Selected Reserve Manpower and 10 Percent Limit on Full-Time b/	(90)	(410)	(940)	(1,350)	(1,720)	(4,550)
Net Costs (Savings)	445	130	(390)	(790)	(1,150)	(1,795)

a. See Table 14 for details.

b. Calculations assume Army Selected Reserve end strengths of: 1986, 738,500; 1987, 753,000; 1988, 767,500; 1989, 782,000; 1990, 796,500.

These savings would come at a cost, however. This approach would probably prevent the Army from reaching its goal of 28 divisions (18 active and 10 reserve) by 1990, since fewer support missions could be transferred from active to reserve status to provide active troops for expansion. Overall, the capability of ground forces during this period would be reduced relative to the Administration's plan. This would increase the risk of not being able to meet all the contingencies planned by the Army, especially during a major European war when the current balance of forces might not favor the NATO allies. 5/ Of course, this option would only delay, not prevent, achievement of the Army's long-run goals. Slowing the expansion of reserve forces would represent a temporary rather than a permanent increase in risk relative to the Administration's plans.

5. For a discussion of these concerns, see Congressional Budget Office, *Army Ground Combat Modernization for the 1980s: Potential Costs and Effects for NATO* (November 1982), pp. 30-31.

APPENDIX

APPENDIX

DEMAND AND SUPPLY OF RESERVE ENLISTED PERSONNEL

To forecast the Army's demand for reserve enlistments, CBO made several assumptions regarding key variables and Army force structure policy:

- It is assumed that the Congress will authorize average reserve strength consistent with the Army's requirements for enlisted personnel "end strength" (see Table 1, Chapter I).

- The number of annual losses from the enlisted reserve force is projected by assuming that the average continuation rates by year-of-service remain equal to those experienced in 1984 (see Table A-1). Thus, several factors that influence losses are assumed to remain unchanged. One important factor--the civilian unemployment rate--averaged 7.5 percent during 1984, with is lower than the previous two years, but about equal to the average unemployment rate over the past ten years. Other factors that affect reserve losses, such as real compensation levels and personnel policies (for example, promotion and retirement policies), are assumed to remain at their 1984 levels into the future.

- The Army's policies toward size of the career force--defined in this study as the proportion of personnel with over 10 years combined active and reserve service--will vary depending on the Army's goals for a more experienced or more youthful manpower mix. A larger career force would reduce the need for new recruits--because older personnel would continue to serve in the reserves in greater proportions than younger members and because training requirements would be reduced. To show the range of possible recruiting situations that the reserves might face, two assumptions are made. Under the first assumption, growth continues in the proportion of personnel with over 10 years of service as reflected in the 1984 continuation patterns. The second assumption holds the percentage of career personnel to the levels present in today's force--26 percent and 27 percent in the USAR and ARNG, respectively. This constrained career force policy is assumed to be implemented by selectively managing reenlist-

TABLE A-1. CONTINUATION RATES USED TO PROJECT ARMY RESERVE ENLISTMENT DEMAND: USAR AND ARNG

Years of Service (active plus reserve)	Continuation Rates			
	USAR 1984		ARNG 1984	
1	0.698		0.788	
2	0.673		0.798	
3	0.669		0.799	
4	0.664		0.801	
5	0.656		0.795	
6	0.559		0.639	
7	0.710	(0.650)	0.729	(0.650)
8	0.806	(0.750)	0.804	(0.750)
9	0.818	(0.750)	0.828	(0.750)
10	0.839	(0.750)	0.843	(0.750)
11	0.860	(0.800)	0.884	(0.800)
12	0.882	(0.800)	0.893	(0.800)
13	0.895	(0.800)	0.904	(0.800)
14	0.907		0.911	
15	0.916		0.924	
16	0.919		0.931	
17	0.930		0.949	
18	0.926		0.958	
19	0.933		0.965	
20	0.930		0.940	
21	0.878		0.869	
22	0.858		0.874	
23	0.837		0.858	
24	0.829		0.879	
25	0.848		0.875	
26	0.838		0.878	
27	0.863		0.870	
28	0.855		0.886	
29	0.857		0.890	
30	0.827		0.879	

SOURCE: Office of Assistant Secretary of Defense, Reserve Affairs.

ments for those who have 7 to 13 years of service by promotion policies or reenlistment bonuses. The continuation rates for groups having 7 to 13 years of service, which are used to project enlistment demand under a scenario limiting career force growth, are shown in parenthesis in Table A-1.

PROJECTIONS OF RESERVE ENLISTMENT DEMAND

The demand for enlistments (PS plus NPS) is projected by using an inventory flow model to simulate the movement of people through successive years of service. The model multiplies the actual number of personnel in each year of service at the end of 1984 by the continuation rate, which is the percentage of enlisted personnel who began the year in paid drill status and remained during the following year. The successive application of continuation rates to the projected numbers of people in each year of service generates a multiyear projection of the profile of reserve forces. For each year, the total demand for recruits is calculated as the sum of the annual losses plus the increase in the end strength over the previous year. An additional 10 percent of this sum is included to allow for recruit losses during the initial training period.

Table A-2 shows the projected force profiles and recruiting requirements for the USAR and ARNG under the assumptions discussed above. The projections show that if today's trend in the growth of senior USAR forces continues, the fraction with over 10 years of service will reach 32 percent by 1990, an increase of 22,000 personnel over 1986. Similarly, the ARNG will have 34 percent of its enlisted force with over 10 years of service by 1990, an increase of 34,000 personnel over 1986. By contrast, junior personnel totals will grow by only about 10,000 in each component.

Under CBO's assumption for a limited career force, the number of enlisted personnel who have 1 to 10 years of service would have to grow more rapidly in both the ARNG and the USAR to meet the end strengths targeted through 1990. As a result, annual recruiting requirements between 1986 and 1990 would be much higher than under a policy that allowed the proportion of career personnel to increase--between 7,000 and 12,000 greater in the USAR, and 10,000 and 14,000 greater in the ARNG.

Enlisted Supply Projections

Projections of the supply of prior-service and non-prior-service personnel to the Army reserves through 1990 are developed in three steps:

- The annual supply of prior-service recruits is estimated to be equal to 41 percent of the eligible Army separations from active duty during the previous five years. This figure equals the fiscal year 1984 result, up from 32 percent in 1980.

- Second, the supply of high-quality NPS male recruits is projected by adjusting the recruiting results for fiscal year 1981 for changes in three key variables--civilian unemployment, the number of recruiters, and the size of the male youth population.

TABLE A-2. PROJECTIONS OF ARMY SELECTED RESERVE ENLISTED PERSONNEL AND RECRUITING REQUIREMENTS: 1986,1988, AND 1990 (In thousands)

	USAR			ARNG		
	1986	1988	1990	1986	1988	1990
Increasing Career Force						
One to 10 Years of Service	178	189	188	287	294	298
Over 10 Years of Service	66	77	88	120	138	154
Total	244	266	276	407	432	452
Percent over 10 Years of Service	27	29	32	29	32	34
Recruit Demand	73	77	72	90	96	94
Constant Career Force						
One to 10 Years of Service	181	197	204	294	312	325
Over 10 Years of Service	63	69	72	113	120	127
Total	244	266	276	407	432	452
Percent over 10 Years of Service	26	26	26	28	28	28
Recruit Demand	80	87	84	100	109	108

SOURCE: Congressional Budget Office.

- Third, the number of male recruits who score in test category IV and the number of female recruits are added (according to the assumptions discussed below) to obtain an estimate of the total NPS supply.

Supply of Prior-Service Recruits

The primary source of prior-service recruits is, of course, the recent Army separatees from active duty. Most PS recruits join the selected reserve within five years after leaving active duty. Between 1980 and 1985, this pool declined from a high of 250,000 to below 180,000, reflecting the drop in separations that resulted from improved retention in the active force (see Table A-3). Beyond 1985, however, this trend is projected to reverse and the prior-service pool should grow to around 200,000 by 1990. Higher loss rates (stemming, in part, from a tightening of reenlistment standards in the active force) will cause this reversal.

Table A-3 also shows that the Army has been recruiting an increasing share of the PS pool (41 percent in 1984 versus 32 percent in 1980). This suggests that past PS recruiting has not been constrained by the available supply. Indeed, in recent years the Army's goals for PS recruiting have been exceeded. For these reasons, this study assumes that the Army will not face a PS supply constraint and can continue to recruit 41 percent (the percentage achieved in 1984) of the available five-year pool of Army personnel separated from active duty.

Non-Prior-Service Supply

The NPS supply projections (for males who score in AFQT categories I-III) are made by adjusting the 1981 recruiting results for three factors: observed changes in civilian unemployment, the pool of eligible males and the number of full-time reserve recruiters for 1982 to 1984, and projected changes in these variables from 1985 to 1990. CBO's latest economic projections assume that civilian unemployment will fall from 7.1 percent in 1985 to 6.3 percent in 1990 (with corresponding declines in youth unemployment), while the pool of eligible males is expected to decline by 7 percent during this period. Finally, the Army plans to increase the number of full-time recruiters to 5,700 by 1986, a 16 percent increase over 1984; the projections assume no further increases beyond 1986.

To project the total supply of NPS reserve recruits, two additional assumptions are made. First, males who score in the lowest category

TABLE A-3. SUPPLY OF PRIOR-SERVICE RECRUITS TO THE ARMY SELECTED RESERVE, ACTUAL RESULTS (1980-1984) AND PROJECTIONS (1985-1990) (In thousands)

Fiscal Year	Total Annual Separations From Active Army (YOS 1-19)	Previous Five-Year Separation Army Pool	Previous Five-Year Prior-Service Recruits a/	Available Prior-Service Pool b/	Prior-Service Accessions			Percent of Available Pool
					USAR	ARNG	Total	
1980	131	724	474	259	33.5	46.8	80.3	32
1981	115	683	445	238	36.0	43.9	79.9	33
1982	110	644	418	226	40.1	44.0	84.1	37
1983	126	625	402	223	39.5	47.2	86.7	39
1984	121	603	406	197	41.2	39.4	80.7	41
1985	117	589	412	177	36.0	36.0	72.0	41
1986	122	596	407	189	36.0	41.0	77.0	41
1987	120	606	409	196	38.0	42.0	80.0	41
1988	124	604	411	193	38.0	42.0	80.0	41
1989	124	607	407	200	39.0	43.0	82.0	41
1990	124	614	412	202	40.0	43.0	83.0	41

NOTE: Data for 1980 through 1984 represent actual results using data compiled by the Defense Manpower Data Center. Estimates of separations for 1985 through 1990 are based on the enlisted force model used to project recruiting demand (see text).

a. Includes all PS recruits to Army selected reserve regardless of service of active duty status.

b. Calculated as the previous five-year Army separations pool less the number of PS recruits during the same period.

(category IV) of the Army's mental aptitude tests are limited to 13 percent of total male recruits--consistent with the Army reserve recruiting results during the last four years. Second, the projections assume that the USAR and ARNG recruit 5,000 and 3,000 NPS females each year, respectively. These totals are consistent with the Army's goals for 1985 and 1986.

Estimates of the future NPS male category I-III recruiting results were made using a civilian unemployment elasticity of 0.4 and a recruiter elasticity of 0.5. 1/ The former is consistent with estimates reported by McNaught (1981) for the ARNG (0.22) and the USAR (0.78), weighted to reflect the proportions of NPS recruits taken by each component during 1981 through 1984. 2/ Since research on the effects of the reserves' recruiting effort is virtually nonexistent, this paper uses an estimate of the recruiter elasticity imputed from actual recruiting results during 1981 through 1984. This imputed estimate of 0.5 (described below) can be compared with estimates of 0.7 to 0.8 reported for active-force recruiting based on econometric analysis. 3/

The estimate of the recruiter elasticity was calculated in two steps. First, "baseline" estimates (with the number of recruiters held constant at

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1. The formula used to project the supply of reserve enlistments is:

$$A_t = A_{1981} \left[\frac{P_t}{P_{1981}}\right] \left[1 + \varepsilon \left(\frac{X_t - X_{1981}}{X_{1981}}\right)\right]$$

Where:

A_t = estimated male NPS category I-III enlistments in year t

A_{1981} = actual male NPS category I-III enlistments in fiscal year 1981.

P_t = estimated size of male youth population (age 17-21) in year t

P_{1981} = actual size of male youth population (age 17-21) in year 1981

X_t = estimated youth unemployment rate or number of full-time recruiters in year t

X_{1981} = actual youth unemployment rate or number of full-time recruiters in 1981

ε_X = enlistment elasticity with respect to variable X.

2. William McNaught, *The Supply of Enlistees to the Selected Reserves*, N-1562-MRAL (Santa Monica, Calif.: The Rand Corporation, July 1981).

3. Lawrence Goldberg, *Enlisted Supply: Past, Present, and Future*, CNS-1168 (Center for Naval Analyses, September 1982).

the 1981 level) for 1982 through 1984 were derived by adjusting 1981 results for actual changes in unemployment and the male youth population. The second step attributes the differences between these baseline estimates and the actual recruiting results to changes in numbers of recruiters during the same period, 1982 through 1984. Dividing the percentage differences in NPS recruits by the percent change in numbers of recruiters yields an "imputed" elasticity for each year; the average of these three years is 0.5.

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